



# LONDON- WEST MIDLANDS ENVIRONMENTAL STATEMENT

Volume 5 | Technical Appendices

CFA26 | Washwood Heath to Curzon Street

**Construction assessment (SV-003-026)**

Sound, noise and vibration

November 2013

ES 3.5.2.26.10

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# Department for Transport

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## Appendix SV-003-026

|                       |                                 |     |
|-----------------------|---------------------------------|-----|
| Environmental topic:  | Sound, noise and vibration      | SV  |
| Appendix name:        | Construction assessment         | 003 |
| Community forum area: | Washwood Heath to Curzon Street | 026 |

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# 1 Introduction

1.1.1 The sound, noise and vibration appendices comprise four sections. The first of these is an introduction to the relevant policy and methodology (Volume 5: Appendix SV-001-000). This relates to the sound, noise and vibration assessment for all community forum areas (CFA).

1.1.2 For the Washwood Heath to Curzon Street community forum area (CFA26), the other three sections are as follows:

- baseline sound, noise and vibration (Volume 5: Appendix SV-002-026);
- construction sound, noise and vibration (Volume 5: Appendix SV-003-026) (this appendix); and
- operational sound, noise and vibration (Volume 5: Appendix SV-004-026).

1.1.3 The outcomes of the assessment are summarised in Volume 2: Section 11 Sound, noise and vibration.

1.1.4 Maps referred to throughout the sound, noise and vibration appendices are contained in the Volume 5: Map Book, Sound, noise and vibration.

1.1.5 This appendix presents the likely noise and vibration impacts, effects and significant effects arising from the construction of the Proposed Scheme for the Washwood Heath to Curzon Street area on:

- people, primarily where they live ('residential receptors') in terms a) individual dwellings and b) on a wider community basis, including any shared community open areas; and
- community facilities such as schools, hospitals, places of worship, and also commercial properties such as offices and hotels, collectively described as 'non-residential receptors' and 'quiet areas'.

1.1.6 The assessment of likely impacts, effects and significant effects from construction noise and vibration on community, ecological or cultural heritage receptors and the assessment of tranquillity are presented in the following documents:

- Community data (Volume 5: Appendix CM-001-026);
- Ecology appendices (Volume 5: Appendix EX-001-004, Appendix EC-002-004, EC-003-004 and Appendix EC-005-004);
- Cultural heritage: Impact assessment table (Volume 5: Appendix CH-003-026); and
- Landscape report (Volume 5: Appendix LV-001-026).

## 1.2 Evaluation of impacts and effects

1.2.1 This appendix provides a quantitative assessment of construction noise and vibration impacts/effects and a qualitative assessment of likely significant effects, based on the impacts/effects identified and other local context information consistent with the scope and methodology defined for the Proposed Scheme.

- 1.2.2 Indirect effects arising from temporary changes in traffic patterns on the existing road network as a consequence of constructing the Proposed Scheme are also reported in this appendix, where they are likely to occur within the study area as defined in Volume 5: Appendix SV-001-000.
- 1.2.3 In undertaking the assessment of sound and vibration, consistent with Environmental Impact Assessment (EIA) Regulations (see Volume 1, Section 1.3) and emerging National Planning Practice Guidance<sup>1</sup> a differentiation between impacts, effects, adverse effects and significant effects is made. Further information is provided in Volume 5: Appendix SV-001-000.
- 1.2.4 The assessment of impacts and effects has been undertaken at assessment locations that are representative of a number of dwellings or other sensitive receptors. The assessment locations employed in this assessment are presented on Volume 5: Map Series Sv-03.

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<sup>1</sup> Information is provided in the Department for Communities and Local Government's emerging National Planning Practice Guidance – Noise <http://planningguidance.planningportal.gov.uk>, (refer to the noise exposure hierarchy), as available on 14th October 2013

## 2 Scope, assumptions and limitations

### 2.1 Regional and local policy guidance

2.1.1 The policy framework for sound, noise and vibration is set out in Volume 1 and in Volume 5: Appendix SV-001-000. As part of the engagement with local authorities through the Planning Forum Sub Group - Acoustics, information regarding any specific local planning guidance in respect of noise and vibration has been requested. Whilst no information has been received for this study area via the Planning Forum Sub Group - Acoustics, the Birmingham Unitary Development Plan (2005)<sup>2</sup> has been identified for local policy guidance on noise and vibration.

2.1.2 This guidance has been considered as part of formulating the detailed application of the impact and significance criteria set out in Volume 5: Appendix SV-001-000.

### 2.2 Engagement

2.2.1 Details of engagement on a route-wide basis with the local and county authorities' Environmental Health Practitioners via the Planning Forum Sub Group - Acoustics, is set out in Volume 1.

2.2.2 Engagement with communities has been via the Community Forums, as set out in Volume 1. In respect of sound, noise and vibration the following discussions have taken place:

- general discussions in respect of local issues, including possible ways to avoid and mitigate the potential impacts of noise or vibration;
- September/October 2012; a specific presentation about sound, noise and vibration with discussion afterwards with one of the project team specialists;
- November/December 2012; specific request for the community forum to propose baseline sound monitoring locations;
- January/February 2013; feedback to the community forum on any proposed baseline monitoring locations; and
- verbal/written response to questions and sound, noise and vibration.

### 2.3 Methodology

2.3.1 The methodology used for the assessment of airborne sound, ground-borne sound and vibration impacts and the determination of significant effects is defined in the Scope and Methodology Report (SMR) (Volume 5: Appendix CT-001-000/1), is clarified in a number of areas by the SMR addendum (Volume 5: Appendix CT-001-000/2). Further information is contained in Volume 5: Appendix SV-001-000.

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<sup>2</sup> Birmingham City Council, (2005), *Birmingham Unitary Development Plan*.

## **2.4 Assumptions**

2.4.1 Route-wide assumptions are outlined in Volume 1 and are further detailed in Volume 5: Appendix SV-001-000. Local assumptions that apply to the assessment of construction sound noise and vibration within this area are set out Volume 2: Washwood Heath to Curzon Street (CFA Report 26), Section 11.

## **2.5 Limitations**

2.5.1 The route-wide limitations and the approach adopted to assure that they will not impact the robust assessment of sound, noise and vibration are presented in Volume 5: Appendix SV-001-000. No specific additional limitations are identified for this study area.

## 3 Environmental Baseline

### Existing baseline

3.1.1 Baseline sound level data has been collected at locations representative of the airborne sound-sensitive receptors. The existing and future baseline airborne sound levels derived from these measurements are given in Volume 5: Appendix SV-002-026. Details of the baseline data collection and the methodology are given in Volume 5: Appendix SV-001-000 and specifically for this study area in Volume 5: Appendix SV-002-026.

### Future baseline

3.1.2 The assessment of noise from construction activities assumes a baseline year of 2017 which represents the period immediately prior to the start of the construction period. As a reasonable worst case, it has been assumed that no change in baseline sound levels will occur between the existing baseline (2012/13) and the future baseline year of 2017. The assessment of noise from construction traffic assumes a baseline year of 2021, representative of the middle of the construction period when the construction traffic flows are expected to be at their peak. Further information can be found in the Traffic and transport assessment (Volume 5: Appendix TR-001-026).

## 4 Effects arising during construction

### 4.1 Introduction

4.1.1 The assessment is reported first for ground-borne vibration and then for airborne sound. Under each of these headings, the results of the quantitative identification of impacts and effects are presented. This is followed by the identification of significant effects and the evidence used to support these conclusions.

4.1.2 The structure of this assessment report is:

- avoidance and mitigation measures;
- quantitative identification of impact and effects:
  - ground-borne vibration;
    - residential; and
    - non-residential.
  - airborne sound;
    - residential; and
    - non-residential.
- assessment of impacts and effects:
  - residential receptors: direct effects – dwellings;
  - residential receptors: direct effects – communities;
  - residential receptors: indirect effects;
  - non-residential receptors: direct effects;
  - non-residential receptors: indirect effects; and
  - cumulative effects from the Proposed Scheme and other committed development.

### 4.2 Avoidance and mitigation measures

4.2.1 These are set out in Volume 2: Washwood Heath to Curzon Street (CFA Report 26), Section 11.

### 4.3 Quantitative identification of impacts and effects

#### Ground-borne vibration

4.3.1 Assessment locations defined for the quantitative assessment of impacts are shown on Volume 5: Map Series SV-03.

4.3.2 For each Assessment Location, the assessment results for residential and non-residential receptors are presented in Table 1. Explanation of the information in Table 1 is provided in Volume 5: Appendix SV-001-000, with the following additional notes:

|    |  |
|----|--|
|    | Where the significant effect column is highlighted, then a significant effect is identified at the referenced community, or individual receptor  |
| *  | Significant effect – the quantitative impact methodology has identified either:<br>1) no impact at this receptor but further information (see assessment) has identified that a significant effect is nonetheless likely; or<br>2) an impact at this receptor which, based upon further qualitative receptor information, (see assessment text) does not give rise to a significant effect |
| ~  | Significant effect - The forecast adverse effects are not considered to be significant on a community basis (further information on methodology is provided in Volume 5: Appendix SV-001-000)  |
| A  | Type of effect – adverse effect  |
| S  | Type of effect – significant adverse effect  |
| NA | Type of effect – generally no adverse effect   |
| B  | Type of effect – for non-residential receptors further detail about the type of effect is set out in the text of Volume 5, Appendix SV-001-000   |
| R  | Type of receptor – residential   |
| V1 | Type of receptor – (V1) vibration sensitive research and manufacturing, hospital, and university equipment, (V2) hotels, hospital wards and education dormitories, (V3) offices, schools and places of worship, (V4) workshops   |
| T  | Receptor design – typical  |
| S  | Receptor design – special  |

Table 1: Assessment of construction induced ground-borne vibration at residential receptors

| Assessment location |  | Impact criteria                                   |  |                    |  | Significance criteria |                               |                  |                 |                      |                |                 | Significant effect       |                   |
|---------------------|--|---|--|--------------------|--|-----------------------|-------------------------------|------------------|-----------------|----------------------|----------------|-----------------|--------------------------|-------------------|
| ID                  | Area represented                                     | Peak particle velocity (PPV) [mm/s] on foundation | Typical/highest monthly indoor vibration dose value (VDV) [m/s <sup>1.75</sup> ] |                    | Construction activity resulting in highest forecast vibration levels | Type of effect        | Number of impacts represented | Type of receptor | Receptor design | Existing environment | Unique feature | Combined impact | Impact duration [months] | Mitigation effect |
|                     |  |   | Day<br>0700-2300   | Night<br>2300-0700 |  |                       |                               |                  |                 |                      |                |                 |                          |                   |
| 69289               | Warren Road, Washwood Heath, Birmingham              | 0.15  | 0.05/0.05  | -                  | Depot earthworks cut   | NA                    | 23                            | R                | T               | -                    | -              | N               | -                        | -                 |
| 68797               | Warren Road, Washwood Heath, Birmingham              | 0.21  | 0.06/0.06  | -                  | Depot earthworks cut   | NA                    | 59                            | R                | T               | -                    | -              | N               | -                        | -                 |
| 75669               | Drews Lane, Birmingham                               | 0.16  | 0.08/0.08  | -                  | Depot watercourse construction                                       | NA                    | 12                            | R                | T               | -                    | -              | N               | -                        | -                 |
| 75715               | Drews Lane, Birmingham                               | 0.17  | 0.08/0.08  | -                  | Depot watercourse construction                                       | NA                    | 11                            | R                | T               | -                    | -              | N               | -                        | -                 |
| 62306               | The Sportsman Public House, Saltley Road, Birmingham | 0.15  | 0.07/0.07  | -                  | Earthworks   | NA                    | 1                             | R                | T               | -                    | -              | N               | -                        | -                 |
| 51814               | Northumberland Street, Birmingham                    | 0.31  | 0.14/0.14  | -                  | Earthworks   | NA                    | 51                            | R                | T               | -                    | -              | N               | -                        | -                 |
| 45327               | The Woodman Public House, Curzon Street, Birmingham  | 1.98  | 0.07/0.64  | -                  | Earthworks   | A                     | 1                             | R                | T               | -                    | -              | Y               | 3                        | -                 |
| 700501              | Albert Street, Birmingham                            | 0.17  | 0.07/0.07  | -                  | Earthworks   | NA                    | 335                           | R                | T               | -                    | -              | N               | -                        | -                 |
| 42269               | Carrs Lane, Birmingham                               | 0.37  | 0.14/0.14  | -                  | Earthworks   | NA                    | 47                            | R                | T               | -                    | -              | N               | -                        | -                 |
| 700500              | Bordesley Street, Birmingham                         | 0.14  | 0.05/0.05  | -                  | Earthworks   | NA                    | 10                            | R                | T               | -                    | -              | N               | -                        | -                 |

| Assessment location |                                    | Impact criteria                                   |  |                    |  | Significance criteria |                               |                  |                 |                      |                |                 | Significant effect       |                   |
|---------------------|------------------------------------|---|--|--------------------|--|-----------------------|-------------------------------|------------------|-----------------|----------------------|----------------|-----------------|--------------------------|-------------------|
| ID                  | Area represented                   | Peak particle velocity (PPV) [mm/s] on foundation | Typical/highest monthly indoor vibration dose value (VDV) [m/s <sup>1.75</sup> ] |                    | Construction activity resulting in highest forecast vibration levels | Type of effect        | Number of impacts represented | Type of receptor | Receptor design | Existing environment | Unique feature | Combined impact | Impact duration [months] | Mitigation effect |
|                     |                                    |   | Day<br>0700-2300   | Night<br>2300-0700 |  |                       |                               |                  |                 |                      |                |                 |                          |                   |
| 41354               | New Bartholomew Street, Birmingham | 0.38  | 0.15/0.15  | -                  | Earthworks   | NA                    | 3                             | R                | T               | -                    | -              | N               | -                        | -                 |

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Table 2: Assessment of construction induced ground-borne vibration at non-residential receptors

| Assessment location |  | Impact criteria                |  |                    |   | Significance criteria |                                  |                  |                 |                      |                |                 | Significant effect          |           |
|---------------------|--|--------------------------------|--|--------------------|---|-----------------------|----------------------------------|------------------|-----------------|----------------------|----------------|-----------------|-----------------------------|-----------|
| ID                  | Area represented   | PPV<br>[mm/s] on<br>foundation | Typical/highest monthly<br>indoor VDV [m/s <sup>1-75</sup> ] |                    | Construction<br>activity resulting<br>in highest forecast<br>vibration levels | Type of effect        | Number of impacts<br>represented | Type of receptor | Receptor design | Existing environment | Unique feature | Combined impact | Impact duration<br>[months] |           |
|                     |  |                                | Day<br>0700-2300   | Night<br>2300-0700 |   |                       |                                  |                  |                 |                      |                |                 |                             |           |
| 66559               | Car showroom (Star Park South), Heartlands Parkway, Birmingham                   | 0.74                           | 0.25/0.25  | -                  | Bromford tunnel vibratory piling  | B                     | 1                                | V <sub>3</sub>   | T               | -                    | -              | N               | -                           | -         |
| 700511              | Masjid Ali Project Mosque, Aston Church Road, Birmingham                         | 0.85                           | 0.06/0.32  | -                  | Earthworks  | B                     | 3                                | V <sub>3</sub>   | T               | -                    | -              | N               | -                           | -         |
| 69846               | Hasanat College, Leigh Road, Washwood Heath, Birmingham                          | 0.45                           | 0.14/0.14  | -                  | Depot earthworks cut  | B                     | 1                                | V <sub>3</sub>   | T               | -                    | -              | N               | -                           | -         |
| 75715               | Retail unit, Drews Lane, Birmingham  | 0.17                           | 0.08/0.08  | -                  | Depot watercourse construction  | B                     | 1                                | V <sub>3</sub>   | T               | -                    | -              | N               | -                           | -         |
| 75527               | Industrial units, Drews Lane, Birmingham   | 0.68                           | 0.27/0.27  | -                  | Earthworks  | B                     | 4                                | V <sub>3</sub>   | T               | -                    | -              | N               | -                           | -         |
| 62306               | Industrial units, Cato Street North, Birmingham                                  | 0.15                           | 0.07/0.07  | -                  | Earthworks  | B                     | 12                               | V <sub>3</sub>   | T               | -                    | -              | N               | -                           | -         |
| 62720               | Mainstream 47 Industrial Park, Mainstream Way, Birmingham                        | 0.15                           | 0.06/0.06  | -                  | Earthworks  | B                     | 15                               | V <sub>3</sub>   | T               | -                    | -              | N               | -                           | -         |
| 35948               | Network Park industrial estate (north), Duddeston Mill Road, Saltley, Birmingham | 1.98                           | 0.65/0.65  | -                  | Earthworks  | B                     | 6                                | V <sub>3</sub>   | T               | -                    | -              | Y               | 4                           | -         |
|                     |  |                                |  |                    |   |                       |                                  |                  |                 |                      |                |                 |                             | CSV26-No3 |

| Assessment location |  | Impact criteria          |   |                    |  | Significance criteria |                               |                  |                 |                      |                |                 |                          | Significant effect |           |
|---------------------|--|--------------------------|---|--------------------|--|-----------------------|-------------------------------|------------------|-----------------|----------------------|----------------|-----------------|--------------------------|--------------------|-----------|
| ID                  | Area represented   | PPV [mm/s] on foundation | Typical/highest monthly indoor VDV [m/s <sup>1-75</sup> ] |                    | Construction activity resulting in highest forecast vibration levels | Type of effect        | Number of impacts represented | Type of receptor | Receptor design | Existing environment | Unique feature | Combined impact | Impact duration [months] | Mitigation effect  |           |
|                     |  |                          | Day<br>0700-2300  | Night<br>2300-0700 |  |                       |                               |                  |                 |                      |                |                 |                          |                    |           |
| 60102               | Saltley Business Park, Dorset Road, Saltley, Birmingham                          | 1.77                     | 0.59/0.59   | -                  | Earthworks   | B                     | 4                             | V3               | T               | -                    | -              | Y               | 2                        | -                  | CSV26-No3 |
| 36091               | Network Rail Control Centre, Duddeston Mill Road, Vauxhall, Birmingham           | 0.39                     | 0.19/0.19   | -                  | Earthworks   | B                     | 1                             | V3               | T               | -                    | -              | N               | -                        | -                  |           |
| 37341               | Duddeston Mill Trading Estate, Duddeston Mill Road, Saltley, Birmingham          | 0.26                     | 0.15/0.15   | -                  | Earthworks   | B                     | 2                             | V3               | T               | -                    | -              | N               | -                        | -                  |           |
| 57184               | Duddeston Mill Trading Estate (South), Duddeston Mill Road, Saltley, Birmingham  | 0.19                     | 0.11/0.11   | -                  | Earthworks   | B                     | 11                            | V3               | T               | -                    | -              | N               | -                        | -                  |           |
| 57122               | Duddeston Mill Trading Estate (North), Duddeston Mill Road, Saltley, Birmingham  | 0.20                     | 0.10/0.10   | -                  | Earthworks   | B                     | 5                             | V3               | T               | -                    | -              | N               | -                        | -                  |           |
| 35848               | Network Park Industrial Estate (south), Duddeston Mill Road, Saltley, Birmingham | 1.98                     | 0.72/0.72   | -                  | Earthworks   | B                     | 3                             | V3               | T               | -                    | -              | Y               | 2                        | -                  | CSV26-No3 |
| 50326               | Nechells Business Centre (north), Dollman Street,                                | 0.23                     | 0.12/0.12   | -                  | Earthworks   | B                     | 9                             | V3               | T               | -                    | -              | N               | -                        | -                  |           |

| Assessment location |  | Impact criteria          |   |                    |  | Significance criteria |                               |                  |                 |                      |                |                 |                          | Significant effect |           |
|---------------------|--|--------------------------|---|--------------------|--|-----------------------|-------------------------------|------------------|-----------------|----------------------|----------------|-----------------|--------------------------|--------------------|-----------|
| ID                  | Area represented   | PPV [mm/s] on foundation | Typical/highest monthly indoor VDV [m/s <sup>1-75</sup> ] |                    | Construction activity resulting in highest forecast vibration levels | Type of effect        | Number of impacts represented | Type of receptor | Receptor design | Existing environment | Unique feature | Combined impact | Impact duration [months] | Mitigation effect  |           |
|                     |  |                          | Day<br>0700-2300  | Night<br>2300-0700 |  |                       |                               |                  |                 |                      |                |                 |                          |                    |           |
|                     | Birmingham   |                          |   |                    |  |                       |                               |                  |                 |                      |                |                 |                          |                    |           |
| 700507              | Birmingham City Council Museum Collection Centre, Dollman Street, Birmingham                     | 1.32                     | 0.13/0.46   | -                  | Earthworks   | B                     | 1                             | V1               | S               | -                    | -              | Y               | 2                        | -                  | CSV26-No4 |
| 51904               | Industrial units, Erskine Street, Birmingham   | 0.53                     | 0.22/0.22   | -                  | Earthworks   | B                     | 4                             | V3               | T               | -                    | -              | N               | -                        | -                  |           |
| 37938               | Safeside at Eastside, Vauxhall Road, Birmingham  | 0.47                     | 0.20/0.20   | -                  | Earthworks   | B                     | 1                             | V3               | T               | -                    | -              | N               | -                        | -                  |           |
| 700505              | West Midlands Fire Service Headquarters offices and commercial units, St James Place, Birmingham | 1.77                     | 0.58/0.58   | -                  | Earthworks   | B                     | 2                             | V3               | T               | -                    | -              | Y               | 1                        | -                  | CSV26-No5 |
| 41588               | Andover Street, Birmingham   | 0.56                     | 0.21/0.22   | -                  | Earthworks   | B                     | 8                             | V3               | T               | -                    | -              | N               | -                        | -                  |           |
| 700503              | Hotel La Tour, Moor Street Queensway, Birmingham   | 0.23                     | 0.09/0.09   | -                  | Earthworks   | B                     | 1                             | V2               | T               | -                    | -              | N               | -                        | -                  |           |
| 42269               | Carrs Lane Church and St Michaels Church, Carrs Lane, Birmingham                                 | 0.37                     | 0.14/0.14   | -                  | Earthworks   | B                     | 50                            | V3               | T               | -                    | -              | N               | -                        | -                  |           |
| 41993               | Taboo Cinema, Park Street, Birmingham  | 0.51                     | 0.19/0.19   | -                  | Earthworks   | B                     | 9                             | V3               | T               | -                    | -              | N               | -                        | -                  |           |

| Assessment location |   | Impact criteria                |  |                    |   | Significance criteria |                                  |                  |                 |                      |                |                 | Significant effect          |   |
|---------------------|---|--------------------------------|--|--------------------|---|-----------------------|----------------------------------|------------------|-----------------|----------------------|----------------|-----------------|-----------------------------|---|
| ID                  | Area represented  | PPV<br>[mm/s] on<br>foundation | Typical/highest monthly<br>indoor VDV [m/s <sup>1-75</sup> ] |                    | Construction<br>activity resulting<br>in highest forecast<br>vibration levels | Type of effect        | Number of impacts<br>represented | Type of receptor | Receptor design | Existing environment | Unique feature | Combined impact | Impact duration<br>[months] |   |
|                     |   |                                | Day<br>0700-2300   | Night<br>2300-0700 |   |                       |                                  |                  |                 |                      |                |                 |                             |   |
| 700500              | Polish Catholic Association,<br>Bordesley Street,<br>Birmingham | 0.14                           | 0.05/0.05  | -                  | Earthworks  | B                     | 3                                | V3               | T               | -                    | -              | N               | -                           | - |
| 41354               | New Bartholomew Street /<br>Bordesley Street,<br>Birmingham     | 0.38                           | 0.15/0.15  | -                  | Earthworks  | B                     | 9                                | V3               | T               | -                    | -              | N               | -                           | - |

## Airborne sound: direct impacts and effects

4.3.3 Activities associated with the construction phases of the Proposed Scheme will generate airborne noise. The assessment of the likely impacts and significant effects as a result of the construction noise has considered the effects on:

- residential receptors, both as individual dwellings and communities;
- non-residential receptors, including quiet areas;

4.3.4 For each type of receptor, subject to the screening distances identified, and based upon supplied plant information from engineers, the typical and highest monthly  $L_{Aeq,T}$  noise levels from construction activities have been calculated at the façade of all assessment locations, which are representative of a number of receptors in the study area.

4.3.5 The assessment results, impact criteria and significance criteria for the assessment of the Proposed Scheme at residential and non-residential receptors are presented in Table 3 and Table 4 respectively.

4.3.6 Explanation of the information within Table 3 and Table 4 is provided in Volume 5: Appendix SV-001-000, with the following additional notes:

|    |  |
|----|--|
|    | Where the significant effect column is highlighted, then a significant effect is identified at the referenced community, or individual receptor  |
| *  | Significant effect – the quantitative impact methodology has identified either: <ol style="list-style-type: none"><li>1) no impact at this receptor but further information (see assessment) has identified that a significant effect is nonetheless likely; or</li><li>2) an impact at this receptor which, based upon further qualitative receptor information, (see assessment text) does not give rise to a significant effect</li></ol> |
| ~  | Significant effect - The forecast adverse effects are not considered to be significant on a community basis (further information on methodology is provided in Volume 5: Appendix SV-001-000)  |
| A  | Type of effect – adverse effect  |
| S  | Type of effect – significant adverse effect  |
| NA | Type of effect – not generally an adverse effect   |
| B  | Type of effect – for non-residential receptors further detail about the type of effect is set out in the text of Appendix SV-001-000   |
| R  | Type of receptor - residential   |
| G  | Type of receptor - (G1) theatres, large auditoria and concert halls, (G2) sound recording and broadcast studios, (G3) places of meeting for religious worship, courts, cinemas, lecture theatres, museums and small auditoria or halls, (G4) schools, colleges, hospitals, hotels and libraries, and (G5) offices and general commercial premises  |
| T  | Receptor design – typical  |
| S  | Receptor design - special  |
| H  | Existing environment – high existing ambient noise levels, day >75 dB, evening >65 dB or night >55 dB $L_{pAeq}$ at the facade   |

L Existing environment – low existing ambient noise levels, day and evening  $\leq 45$  dB, or night  $\leq 35$  dB L<sub>pAeq</sub> at the facade

D,E,N Impact duration (months) – duration of impact during the day (D), evening (E) or night (N)

NI Mitigation effect - identified as likely to qualify for noise insulation under the draft CoCP

Appendix SV-003-026

Table 3: Assessment of construction noise at residential receptors

| Assessment location |                                      | Impact criteria   |             |           | Significance criteria   |                |                               |                  |                 |                      |                |                 | Significant effect       |                   |
|---------------------|--------------------------------------|---|-------------|-----------|---|----------------|-------------------------------|------------------|-----------------|----------------------|----------------|-----------------|--------------------------|-------------------|
| ID                  | Area represented                     | Typical/highest monthly outdoor L <sub>pAeq</sub> [dB]<br>[Assessment category A/B/C] |             |           | Construction activity resulting in highest forecast noise levels  | Type of effect | Number of impacts represented | Type of receptor | Receptor design | Existing environment | Unique feature | Combined impact | Impact duration [months] | Mitigation effect |
| Day<br>0700-1900    | Evening<br>1900-2300                 | Night<br>2300-0700  |             |           |   |                |                               |                  |                 |                      |                |                 |                          |                   |
| 36358               | Mill Burn Way,<br>Birmingham         | 50/54 [A]   | 40/42 [C]   | 43/48 [C] | Day: demolition;<br>Eve: classic rail track laying<br>Duddeston Mill Road;<br>Night: Curzon Street No.3<br>viaduct deck           | NA             | 143                           | R                | T               | -                    | -              | N               | -                        | -                 |
| 36618               | Moor Street Queensway,<br>Birmingham | 62/72 [C]   | -           | 44/47 [C] | Day: demolition;<br>Night: Curzon Street No.3<br>viaduct deck   | NA             | 57                            | R                | T               | H                    | -              | N               | -                        | -                 |
| 38276               | Temple Row,<br>Birmingham            | 43/51 [A]   | -           | 36/39 [C] | Day: demolition;<br>Night: Curzon Street No.3<br>viaduct deck   | NA             | 27                            | R                | T               | -                    | -              | N               | -                        | -                 |
| 40462               | Allison Street,<br>Birmingham        | 55/65 [B]   | -           | 38/40 [C] | Day: demolition;<br>Night: Curzon Street No.3<br>viaduct deck   | NA             | 3                             | R                | T               | H                    | -              | N               | -                        | -                 |
| 40791               | Oxford Street,<br>Birmingham         | 47/55 [B]   | -           | 37/40 [C] | Day: demolition;<br>Night: Curzon Street No.2<br>viaduct deck   | NA             | 2                             | R                | T               | H                    | -              | N               | -                        | -                 |
| 41264               | Fazeley Street,<br>Birmingham        | 60/69 [C]   | <40/<40 [C] | 48/51 [C] | Day: utility diversions;<br>Eve: classic rail track recovery<br>Duddeston Mill Road;<br>Night: Curzon Street No.3<br>viaduct deck | NA             | 463                           | R                | T               | H                    | -              | N               | -                        | -                 |
| 41354               | New Bartholomew                      | 66/75 [B]   | -           | 46/49 [C] | Day: utility diversions;<br>Night: Curzon Street No.3   | A              | 3                             | R                | T               | H                    | -              | N               | D7                       | -                 |
|                     |                                      |   |             |           |   |                |                               |                  |                 |                      |                |                 |                          | CSV26-C07         |

| Assessment location |                                    | Impact criteria   |                      |                    | Significance criteria   |                |                               |                  |                 |                      |                |                 | Significant effect       |                   |  |
|---------------------|------------------------------------|---|----------------------|--------------------|---|----------------|-------------------------------|------------------|-----------------|----------------------|----------------|-----------------|--------------------------|-------------------|--|
| ID                  | Area represented                   | Typical/highest monthly outdoor L <sub>pAeq</sub> [dB]<br>[Assessment category A/B/C] |                      |                    | Construction activity resulting in highest forecast noise levels  | Type of effect | Number of impacts represented | Type of receptor | Receptor design | Existing environment | Unique feature | Combined impact | Impact duration [months] | Mitigation effect |  |
|                     |                                    | Day<br>0700-1900  | Evening<br>1900-2300 | Night<br>2300-0700 |   |                |                               |                  |                 |                      |                |                 |                          |                   |  |
|                     | Street, Birmingham                 |   |                      |                    | viaduct deck  |                |                               |                  |                 |                      |                |                 |                          |                   |  |
| 42018               | Digbeth, Birmingham                | <40/46 [C]  | -                    | <35/<35 [C]        | Day: demolition;<br>Night: Curzon Street No.3 viaduct deck  | NA             | 2                             | R                | T               | H                    | -              | N               | -                        | -                 |  |
| 42114               | Rotunda and New Street, Birmingham | <40/45 [A]  | -                    | <35/<35 [C]        | Day: demolition;<br>Night: Curzon Street No.3 viaduct deck  | NA             | 304                           | R                | T               | -                    | -              | N               | -                        | -                 |  |
| 42269               | Carrs Lane, Birmingham             | 63/74 [C]   | -                    | 42/45 [C]          | Day: demolition;<br>Night: Curzon Street No.3 viaduct deck  | NA             | 47                            | R                | T               | H                    | -              | N               | -                        | -                 |  |
| 42326               | Dale End, Birmingham               | 42/50 [C]   | -                    | <35/<35 [C]        | Day: demolition;<br>Night: Curzon Street No.3 viaduct deck  | NA             | 34                            | R                | T               | H                    | -              | N               | -                        | -                 |  |
| 42359               | High Street, Birmingham            | 49/58 [C]   | -                    | <35/<35 [C]        | Day: demolition;<br>Night: Curzon Street No.3 viaduct deck  | NA             | 122                           | R                | T               | H                    | -              | N               | -                        | -                 |  |
| 44620               | Jennens Road, Birmingham           | 53/60 [B]   | <40/<40 [C]          | 45/50 [C]          | Day: demolition;<br>Eve: classic rail track laying Duddeston Mill Road;<br>Night: Curzon Street No.3 viaduct deck | NA             | 2                             | R                | T               | H                    | -              | N               | -                        | -                 |  |
| 45208               | Jennens Road, Birmingham           | 54/63 [C]   | -                    | <35/37 [C]         | Day: Curzon Street station ground engineering;<br>Night: install railway  | NA             | 240                           | R                | T               | H                    | -              | N               | -                        | -                 |  |

| Assessment location |   | Impact criteria   |                      |                    |  |                | Significance criteria         |                  |                 |                      |                |                 |                          | Significant effect |           |
|---------------------|---|---|----------------------|--------------------|--|----------------|-------------------------------|------------------|-----------------|----------------------|----------------|-----------------|--------------------------|--------------------|-----------|
| ID                  | Area represented                                    | Typical/highest monthly outdoor L <sub>pAeq</sub> [dB]<br>[Assessment category A/B/C] |                      |                    | Construction activity resulting in highest forecast noise levels   | Type of effect | Number of impacts represented | Type of receptor | Receptor design | Existing environment | Unique feature | Combined impact | Impact duration [months] | Mitigation effect  |           |
|                     |   | Day<br>0700-1900  | Evening<br>1900-2300 | Night<br>2300-0700 |  |                |                               |                  |                 |                      |                |                 |                          |                    |           |
|                     |   |   |                      |                    | protection barrier   |                |                               |                  |                 |                      |                |                 |                          |                    |           |
| 45327               | The Woodman public house, Curzon Street, Birmingham | 72/83 [B]   | -                    | 47/54 [C]          | Day: Curzon Street station ground engineering;<br>Night: install railway protection barrier                                | S              | 1                             | R                | T               | H                    | -              | Y               | D 25                     | NI                 | CSV26-D01 |
| 46410               | The Priory Queensway, Birmingham                    | 59/68 [B]   | -                    | 46/49 [C]          | Day: demolition;<br>Night: Curzon Street No.3 viaduct deck   | NA             | 52                            | R                | T               | H                    | -              | N               | -                        | -                  |           |
| 48796               | Great Barr Street, Birmingham                       | 56/60 [A]   | <40/<40 [C]          | 49/53 [C]          | Day: demolition;<br>Eve: classic rail track laying Duddeston Mill Road;<br>Night: Curzon Street No.3 viaduct deck          | NA             | 3                             | R                | T               | -                    | -              | N               | -                        | -                  |           |
| 48817               | Watery Lane Middleway, Bordesley, Birmingham        | 59/70 [C]   | <40/<40 [C]          | 45/50 [C]          | Day: road construction;<br>Eve: classic rail track recovery Duddeston Mill Road;<br>Night: Curzon Street No.3 viaduct deck | NA             | 2                             | R                | T               | H                    | -              | N               | -                        | -                  |           |
| 49547               | Vauxhall Road, Birmingham                           | 57/65 [C]   | <40/41 [C]           | 46/53 [C]          | Day: demolition;<br>Eve: classic rail track recovery Duddeston Mill Road;<br>Night: Curzon Street No.3 viaduct deck        | NA             | 60                            | R                | T               | H                    | -              | N               | -                        | -                  |           |
| 49589               | Hindlow Close, Birmingham                           | 56/64 [B]   | 44/46 [C]            | 42/47 [C]          | Day: demolition;<br>Eve: classic rail track laying   | NA             | 23                            | R                | T               | H                    | -              | N               | -                        | -                  |           |

| Assessment location |                                     | Impact criteria   |                      |                    | Significance criteria   |                |                               |                  |                 |                      |                |                 | Significant effect       |                   |
|---------------------|-------------------------------------|---|----------------------|--------------------|---|----------------|-------------------------------|------------------|-----------------|----------------------|----------------|-----------------|--------------------------|-------------------|
| ID                  | Area represented                    | Typical/highest monthly outdoor L <sub>pAeq</sub> [dB]<br>[Assessment category A/B/C] |                      |                    | Construction activity resulting in highest forecast noise levels  | Type of effect | Number of impacts represented | Type of receptor | Receptor design | Existing environment | Unique feature | Combined impact | Impact duration [months] | Mitigation effect |
|                     |                                     | Day<br>0700-1900  | Evening<br>1900-2300 | Night<br>2300-0700 |   |                |                               |                  |                 |                      |                |                 |                          |                   |
|                     |                                     |   |                      |                    | Duddeston Mill Road;<br>Night: classic rail track recovery Duddeston Mill Road  |                |                               |                  |                 |                      |                |                 |                          |                   |
| 49725               | Ashted Walk,<br>Birmingham          | 53/60 [A]   | 45/47 [A]            | 43/48 [C]          | Day: demolition;<br>Eve: classic rail track laying<br>Duddeston Mill Road;<br>Night: classic rail track laying<br>Duddeston Mill Road | NA             | 31                            | R                | T               | -                    | -              | N               | -                        | -                 |
| 49870               | Great Francis Street,<br>Birmingham | 51/57 [B]   | 44/45 [C]            | 42/47 [C]          | Day: demolition;<br>Eve: classic rail track laying<br>Duddeston Mill Road;<br>Night: classic rail track laying<br>Duddeston Mill Road | NA             | 1                             | R                | T               | H                    | -              | N               | -                        | -                 |
| 50821               | Barrack Street,<br>Birmingham       | 48/56 [B]   | <40/41 [B]           | 41/47 [C]          | Day: demolition;<br>Eve: classic rail track laying<br>Duddeston Mill Road;<br>Night: Curzon Street No.2 viaduct deck                  | NA             | 65                            | R                | T               | -                    | -              | N               | -                        | -                 |
| 50998               | Duddeston Manor Road,<br>Birmingham | 54/60 [A]   | 42/44 [B]            | 44/50 [C]          | Day: demolition;<br>Eve: classic rail track laying<br>Duddeston Mill Road;<br>Night: Curzon Street No.3 viaduct deck                  | NA             | 183                           | R                | T               | -                    | -              | N               | -                        | -                 |
| 51047               | Duddeston Manor Road,<br>Birmingham | 49/54 [B]   | 43/45 [C]            | 42/47 [C]          | Day: demolition;<br>Eve: classic rail track laying<br>Duddeston Mill Road;  | NA             | 200                           | R                | T               | H                    | -              | N               | -                        | -                 |

| Assessment location |                                    | Impact criteria   |                      |                    |  |                | Significance criteria         |                  |                 |                      |                |                 |                          | Significant effect |           |
|---------------------|------------------------------------|---|----------------------|--------------------|--|----------------|-------------------------------|------------------|-----------------|----------------------|----------------|-----------------|--------------------------|--------------------|-----------|
| ID                  | Area represented                   | Typical/highest monthly outdoor L <sub>pAeq</sub> [dB]<br>[Assessment category A/B/C] |                      |                    | Construction activity resulting in highest forecast noise levels   | Type of effect | Number of impacts represented | Type of receptor | Receptor design | Existing environment | Unique feature | Combined impact | Impact duration [months] | Mitigation effect  |           |
|                     |                                    | Day<br>0700-1900  | Evening<br>1900-2300 | Night<br>2300-0700 |  |                |                               |                  |                 |                      |                |                 |                          |                    |           |
|                     |                                    |   |                      |                    | Night: classic rail track laying Duddeston Mill Road   |                |                               |                  |                 |                      |                |                 |                          |                    |           |
| 51814               | Northumberland Street, Birmingham  | 61/71 [A]   | 43/45 [B]            | 57/64 [C]          | Day: demolition; Eve: classic rail track laying Duddeston Mill Road; Night: Curzon Street No.2 viaduct deck          | S              | 51                            | R                | T               | -                    | -              | N               | D 9;<br>N 5              | NI                 | CSV26-Co4 |
| 52180               | A4540 Lawley Middleway, Birmingham | 67/76 [C]   | <40/<40 [C]          | 55/62 [C]          | Day: road construction; Eve: classic rail track recovery Duddeston Mill Road; Night: Curzon Street No.3 viaduct deck | S              | 18                            | R                | T               | -                    | -              | N               | D 2;<br>N 5              | NI                 | CSV26-Co5 |
| 52201               | Windsor Street South, Birmingham   | 57/64 [B]   | <40/<40 [B]          | 46/53 [C]          | Day: demolition; Eve: classic rail track recovery Duddeston Mill Road; Night: Curzon Street No.3 viaduct deck        | NA             | 40                            | R                | T               | -                    | -              | N               | -                        | -                  |           |
| 52220               | Vauxhall Road, Birmingham          | 62/68 [C]   | <40/41 [C]           | 52/59 [C]          | Day: demolition; Eve: classic rail track laying Duddeston Mill Road; Night: Curzon Street No.3 viaduct deck          | S              | 32                            | R                | T               | -                    | -              | N               | N 5                      | NI                 | CSV26-Co5 |
| 52342               | Barrack Street, Birmingham         | 54/60 [B]   | 41/43 [B]            | 47/53 [C]          | Day: demolition; Eve: classic rail track laying Duddeston Mill Road; Night: Curzon Street No.2                       | NA             | 37                            | R                | T               | -                    | -              | N               | -                        | -                  |           |

| Assessment location |  | Impact criteria   |                      |                    | Significance criteria  |                |                               |                  |                 |                      |                |                 | Significant effect       |                   |
|---------------------|--|---|----------------------|--------------------|--|----------------|-------------------------------|------------------|-----------------|----------------------|----------------|-----------------|--------------------------|-------------------|
| ID                  | Area represented   | Typical/highest monthly outdoor L <sub>pAeq</sub> [dB]<br>[Assessment category A/B/C] |                      |                    | Construction activity resulting in highest forecast noise levels   | Type of effect | Number of impacts represented | Type of receptor | Receptor design | Existing environment | Unique feature | Combined impact | Impact duration [months] | Mitigation effect |
|                     |  | Day<br>0700-1900  | Evening<br>1900-2300 | Night<br>2300-0700 |  |                |                               |                  |                 |                      |                |                 |                          |                   |
|                     |  |   |                      |                    | viaduct deck   |                |                               |                  |                 |                      |                |                 |                          |                   |
| 52360               | Vauxhall Road, Birmingham  | 53/59 [C]   | 43/45 [C]            | 44/49 [C]          | Day: demolition;<br>Eve: classic rail track laying Duddeston Mill Road;<br>Night: Curzon Street No.2 viaduct deck                              | NA             | 12                            | R                | T               | H                    | -              | N               | -                        | -                 |
| 52398               | Penn Street, and proposed Eastside Locks development, Birmingham | 62/68 [A]   | <40/<40 [B]          | 54/60 [C]          | Day: demolition;<br>Eve: classic rail track laying Duddeston Mill Road;<br>Night: Curzon Street No.3 viaduct deck                              | S              | 2                             | R                | T               | -                    | -              | N               | D7;<br>N5                | NI                |
| 53526               | Bloomsbury Walk, Birmingham                                      | 52/61 [C]   | 40/45 [C]            | 40/47 [C]          | Day: B4114 Saltley Viaduct bridge demolition;<br>Eve: classic rail track laying Duddeston Mill Road;<br>Night: B4114 Saltley viaduct deck      | NA             | 88                            | R                | T               | H                    | -              | N               | -                        | -                 |
| 53805               | Melvina Road, Birmingham   | 52/60 [C]   | 45/47 [C]            | 43/49 [C]          | Day: B4114 Saltley Viaduct bridge demolition;<br>Eve: classic rail track laying Duddeston Mill Road;<br>Night: Duddeston junction viaduct deck | NA             | 66                            | R                | T               | H                    | -              | N               | -                        | -                 |
| 53993               | Melvina Road, Birmingham   | 49/59 [C]   | 40/44 [C]            | 40/45 [C]          | Day: B4114 Saltley Viaduct bridge demolition;<br>Eve: classic rail track laying  | NA             | 138                           | R                | T               | H                    | -              | N               | -                        | -                 |

| Assessment location |                                | Impact criteria   |                      |                    |  |                | Significance criteria         |                  |                 |                      |                |                 |                          | Significant effect |   |
|---------------------|--------------------------------|---|----------------------|--------------------|--|----------------|-------------------------------|------------------|-----------------|----------------------|----------------|-----------------|--------------------------|--------------------|---|
| ID                  | Area represented               | Typical/highest monthly outdoor L <sub>pAeq</sub> [dB]<br>[Assessment category A/B/C] |                      |                    | Construction activity resulting in highest forecast noise levels   | Type of effect | Number of impacts represented | Type of receptor | Receptor design | Existing environment | Unique feature | Combined impact | Impact duration [months] | Mitigation effect  |   |
|                     |                                | Day<br>0700-1900  | Evening<br>1900-2300 | Night<br>2300-0700 |  |                |                               |                  |                 |                      |                |                 |                          |                    |   |
|                     |                                |   |                      |                    | Duddeston Mill Road;<br>Night: Saltley canal underbridge deck  |                |                               |                  |                 |                      |                |                 |                          |                    |   |
| 54833               | St. Saviours Road, Birmingham  | 51/60 [A]   | 44/46 [B]            | 41/46 [C]          | Day: demolition;<br>Eve: classic rail track laying<br>Duddeston Mill Road;<br>Night: classic rail track laying<br>Duddeston Mill Road                              | NA             | 72                            | R                | T               | -                    | -              | N               | -                        | -                  |   |
| 54867               | George Arthur Road, Birmingham | 52/60 [A]   | 43/47 [B]            | 42/47 [C]          | Day: B4114 Saltley Viaduct bridge demolition;<br>Eve: classic rail track laying<br>Duddeston Mill Road;<br>Night: classic rail track laying<br>Duddeston Mill Road | NA             | 116                           | R                | T               | -                    | -              | N               | -                        | -                  |   |
| 55784               | Reginald Road, Birmingham      | 49/55 [A]   | 40/45 [C]            | 40/45 [C]          | Day: demolition;<br>Eve: classic rail track laying<br>Duddeston Mill Road;<br>Night: Duddeston junction viaduct deck   | NA             | 164                           | R                | T               | -                    | -              | N               | -                        | -                  |   |
| 56716               | City View, Birmingham          | 52/57 [A]   | 47/49 [A]            | 45/51 [B]          | Day: demolition;<br>Eve: classic rail track laying<br>Duddeston Mill Road;<br>Night: Duddeston junction viaduct deck   | A              | 74                            | R                | T               | -                    | -              | N               | N 1                      | -                  | * |
| 56870               | Ashley Gardens, Birmingham     | 55/60 [A]   | 45/50 [A]            | 45/51 [B]          | Day: demolition;<br>Eve: classic rail track laying   | A              | 16                            | R                | T               | -                    | -              | N               | N 2                      | -                  | * |

| Assessment location |   | Impact criteria   |                      |                    |   |                | Significance criteria         |                  |                 |                      |                |                 |                          | Significant effect |   |
|---------------------|---|---|----------------------|--------------------|---|----------------|-------------------------------|------------------|-----------------|----------------------|----------------|-----------------|--------------------------|--------------------|---|
| ID                  | Area represented  | Typical/highest monthly outdoor L <sub>pAeq</sub> [dB]<br>[Assessment category A/B/C] |                      |                    | Construction activity resulting in highest forecast noise levels  | Type of effect | Number of impacts represented | Type of receptor | Receptor design | Existing environment | Unique feature | Combined impact | Impact duration [months] | Mitigation effect  |   |
|                     |   | Day<br>0700-1900  | Evening<br>1900-2300 | Night<br>2300-0700 |   |                |                               |                  |                 |                      |                |                 |                          |                    |   |
|                     |   |   |                      |                    | Duddeston Mill Road;<br>Night: Duddeston junction viaduct deck  |                |                               |                  |                 |                      |                |                 |                          |                    |   |
| 57289               | Adderley Road,<br>Birmingham                            | 57/63 [C]   | 48/52 [C]            | 48/55 [C]          | Day: utility diversions;<br>Eve: classic rail track laying<br>Duddeston Mill Road;<br>Night: Duddeston junction viaduct deck          | NA             | 49                            | R                | T               | H                    | -              | N               | -                        | -                  |   |
| 57342               | Adderley Road,<br>Birmingham                            | 50/56 [B]   | 46/47 [C]            | 42/48 [C]          | Day: demolition;<br>Eve: classic rail track laying<br>Duddeston Mill Road;<br>Night: classic rail track laying<br>Duddeston Mill Road | NA             | 36                            | R                | T               | -                    | -              | N               | -                        | -                  |   |
| 57363               | Lock Keepers Cottage,<br>Crawford Street,<br>Birmingham | 59/72 [A]   | 41/46 [C]            | 43/51 [C]          | Day: utility diversions;<br>Eve: classic rail track recovery<br>Duddeston Mill Road;<br>Night: B4114 Saltley viaduct deck             | A              | 1                             | R                | T               | H                    | -              | N               | D 4                      | -                  | ~ |
| 58294               | Wolseley Street,<br>Bordesley, Birmingham               | 52/59 [A]   | 45/47 [C]            | 45/50 [C]          | Day: demolition;<br>Eve: classic rail track laying<br>Duddeston Mill Road;<br>Night: Curzon Street No.2 viaduct deck                  | NA             | 35                            | R                | T               | -                    | -              | N               | -                        | -                  |   |
| 58528               | Chartist Road,<br>Birmingham                            | 61/70 [C]   | 41/46 [C]            | 44/54 [C]          | Day: utility diversions;<br>Eve: classic rail track recovery<br>Washwood Heath depot;   | NA             | 108                           | R                | T               | H                    | -              | N               | -                        | -                  |   |

| Assessment location |                             | Impact criteria   |                      |                    |   |                | Significance criteria         |                  |                 |                      |                |                 |                          | Significant effect |           |
|---------------------|-----------------------------|---|----------------------|--------------------|---|----------------|-------------------------------|------------------|-----------------|----------------------|----------------|-----------------|--------------------------|--------------------|-----------|
| ID                  | Area represented            | Typical/highest monthly outdoor L <sub>pAeq</sub> [dB]<br>[Assessment category A/B/C] |                      |                    | Construction activity resulting in highest forecast noise levels  | Type of effect | Number of impacts represented | Type of receptor | Receptor design | Existing environment | Unique feature | Combined impact | Impact duration [months] | Mitigation effect  |           |
|                     |                             | Day<br>0700-1900  | Evening<br>1900-2300 | Night<br>2300-0700 |   |                |                               |                  |                 |                      |                |                 |                          |                    |           |
|                     |                             |   |                      |                    | Night: Bromford tunnel west portal sheet piling   |                |                               |                  |                 |                      |                |                 |                          |                    |           |
| 58626               | Bennetts Road, Birmingham   | 51/57 [C]   | <40/40 [C]           | 36/43 [C]          | Day: demolition;<br>Eve: classic rail track recovery Washwood Heath depot;<br>Night: Bromford tunnel west portal sheet piling | NA             | 69                            | R                | T               | H                    | -              | N               | -                        | -                  |           |
| 58835               | Sandway Gardens, Birmingham | 47/53 [A]   | <40/<40 [B]          | <35/43 [C]         | Day: demolition;<br>Eve: classic rail track recovery Washwood Heath depot;<br>Night: Bromford tunnel west portal sheet piling | NA             | 42                            | R                | T               | -                    | -              | N               | -                        | -                  |           |
| 59103               | Bennetts Road, Birmingham   | 52/57 [C]   | <40/40 [C]           | 37/44 [C]          | Day: demolition;<br>Eve: classic rail track recovery Washwood Heath depot;<br>Night: Bromford tunnel west portal sheet piling | NA             | 35                            | R                | T               | H                    | -              | N               | -                        | -                  |           |
| 59191               | Arley Road, Birmingham      | 59/77 [A]   | <40/<40 [C]          | 39/47 [C]          | Day: demolition;<br>Eve: classic rail track recovery Washwood Heath depot;<br>Night: Bromford tunnel west portal sheet piling | A              | 92                            | R                | T               | -                    | -              | N               | D1                       | -                  | CSV26-Co3 |
| 59457               | Johnson Street, Birmingham  | 48/56 [A]   | 40/43 [B]            | 38/44 [C]          | Day: demolition;<br>Eve: classic rail track recovery Washwood Heath depot;<br>Night: classic rail track                       | NA             | 147                           | R                | T               | -                    | -              | N               | -                        | -                  |           |

| Assessment location |                                    | Impact criteria   |                      |                    |   |                | Significance criteria         |                  |                 |                      |                |                 |                          | Significant effect |  |
|---------------------|------------------------------------|---|----------------------|--------------------|---|----------------|-------------------------------|------------------|-----------------|----------------------|----------------|-----------------|--------------------------|--------------------|--|
| ID                  | Area represented                   | Typical/highest monthly outdoor L <sub>pAeq</sub> [dB]<br>[Assessment category A/B/C] |                      |                    | Construction activity resulting in highest forecast noise levels  | Type of effect | Number of impacts represented | Type of receptor | Receptor design | Existing environment | Unique feature | Combined impact | Impact duration [months] | Mitigation effect  |  |
|                     |                                    | Day<br>0700-1900  | Evening<br>1900-2300 | Night<br>2300-0700 |   |                |                               |                  |                 |                      |                |                 |                          |                    |  |
|                     |                                    |   |                      |                    | recovery Washwood Heath depot   |                |                               |                  |                 |                      |                |                 |                          |                    |  |
| 59609               | Mount Street, Nechells, Birmingham | 55/62 [A]   | 41/44 [A]            | 41/46 [C]          | Day: demolition;<br>Eve: classic rail track recovery Washwood Heath depot;<br>Night: Saltley canal underbridge deck                                     | NA             | 34                            | R                | T               | -                    | -              | N               | -                        | -                  |  |
| 61166               | Washwood Heath Road, Birmingham    | 58/68 [C]   | <40/43 [C]           | 43/54 [C]          | Day: B4114 Saltley Viaduct bridge demolition;<br>Eve: classic rail track laying Duddeston Mill Road;<br>Night: Saltley canal underbridge deck           | NA             | 47                            | R                | T               | H                    | -              | N               | -                        | -                  |  |
| 61503               | Adderley Gardens, Birmingham       | 55/67 [C]   | 43/48 [C]            | 42/48 [C]          | Day: utility diversions;<br>Eve: classic rail track laying Duddeston Mill Road;<br>Night: classic rail track laying Duddeston Mill Road                 | NA             | 34                            | R                | T               | H                    | -              | N               | -                        | -                  |  |
| 61830               | Washwood Heath Road, Birmingham    | 52/59 [C]   | <40/<40 [C]          | 39/47 [C]          | Day: B4114 Saltley Viaduct bridge demolition;<br>Eve: classic rail track laying Duddeston Mill Road;<br>Night: Bromford tunnel west portal sheet piling | NA             | 79                            | R                | T               | H                    | -              | N               | -                        | -                  |  |
| 62056               | Washwood Heath Road,               | 54/65 [C]   | <40/44 [C]           | 41/51 [C]          | Day: B4114 Saltley Viaduct bridge demolition;   | NA             | 79                            | R                | T               | H                    | -              | N               | -                        | -                  |  |

| Assessment location |  | Impact criteria   |                      |                    |   |                | Significance criteria         |                  |                 |                      |                |                 |                          | Significant effect |  |
|---------------------|--|---|----------------------|--------------------|---|----------------|-------------------------------|------------------|-----------------|----------------------|----------------|-----------------|--------------------------|--------------------|--|
| ID                  | Area represented                                     | Typical/highest monthly outdoor L <sub>pAeq</sub> [dB]<br>[Assessment category A/B/C] |                      |                    | Construction activity resulting in highest forecast noise levels  | Type of effect | Number of impacts represented | Type of receptor | Receptor design | Existing environment | Unique feature | Combined impact | Impact duration [months] | Mitigation effect  |  |
|                     |  | Day<br>0700-1900  | Evening<br>1900-2300 | Night<br>2300-0700 |   |                |                               |                  |                 |                      |                |                 |                          |                    |  |
|                     | Birmingham   |   |                      |                    | Eve: classic rail track laying Duddeston Mill Road;<br>Night: Saltley canal underbridge deck  |                |                               |                  |                 |                      |                |                 |                          |                    |  |
| 62306               | The Sportsman public house, Saltley Road, Birmingham | 61/68 [C]   | 44/47 [C]            | 45/53 [C]          | Day: B4114 Saltley viaduct piling;<br>Eve: classic rail track laying Duddeston Mill Road;<br>Night: Saltley canal underbridge deck    | NA             | 1                             | R                | T               | H                    | -              | N               | -                        | -                  |  |
| 63617               | Aston Church Road, Birmingham                        | 59/67 [C]   | 47/51 [C]            | 45/51 [C]          | Day: demolition;<br>Eve: classic rail track recovery Washwood Heath depot;<br>Night: classic rail track recovery Washwood Heath depot | NA             | 6                             | R                | T               | H                    | -              | N               | -                        | -                  |  |
| 64051               | Little Clover Close, Birmingham                      | 54/61 [A]   | 43/47 [A]            | 41/47 [C]          | Day: demolition;<br>Eve: classic rail track recovery Washwood Heath depot;<br>Night: classic rail track recovery Washwood Heath depot | NA             | 27                            | R                | T               | -                    | -              | N               | -                        | -                  |  |
| 64140               | Aston Church Road, Birmingham                        | 55/62 [A]   | 44/48 [B]            | 41/48 [C]          | Day: demolition;<br>Eve: classic rail track recovery Washwood Heath depot;<br>Night: classic rail track recovery Washwood Heath       | NA             | 18                            | R                | T               | -                    | -              | N               | -                        | -                  |  |

| Assessment location |                                    | Impact criteria   |                      |                    | Significance criteria   |                |                               |                  |                 |                      |                |                 | Significant effect       |                   |
|---------------------|------------------------------------|---|----------------------|--------------------|---|----------------|-------------------------------|------------------|-----------------|----------------------|----------------|-----------------|--------------------------|-------------------|
| ID                  | Area represented                   | Typical/highest monthly outdoor L <sub>pAeq</sub> [dB]<br>[Assessment category A/B/C] |                      |                    | Construction activity resulting in highest forecast noise levels  | Type of effect | Number of impacts represented | Type of receptor | Receptor design | Existing environment | Unique feature | Combined impact | Impact duration [months] | Mitigation effect |
|                     |                                    | Day<br>0700-1900  | Evening<br>1900-2300 | Night<br>2300-0700 |   |                |                               |                  |                 |                      |                |                 |                          |                   |
|                     |                                    |   |                      |                    | depot   |                |                               |                  |                 |                      |                |                 |                          |                   |
| 64317               | Aston Church Road, Birmingham      | 55/64 [C]   | 45/49 [C]            | 43/49 [C]          | Day: site clearance; Eve: classic rail track recovery Washwood Heath depot; Night: classic rail track recovery Washwood Heath depot     | NA             | 1                             | R                | T               | H                    | -              | N               | -                        | -                 |
| 64544               | Mount Street, Nechells, Birmingham | 54/62 [B]   | 45/49 [B]            | 42/49 [C]          | Day: site clearance; Eve: classic rail track recovery Washwood Heath depot; Night: classic rail track recovery Washwood Heath depot     | NA             | 40                            | R                | T               | -                    | -              | N               | -                        | -                 |
| 64621               | Mount Street, Nechells, Birmingham | 52/58 [B]   | 43/47 [C]            | 41/47 [C]          | Day: demolition; Eve: classic rail track laying Washwood Heath depot; Night: classic rail track laying Washwood Heath depot             | NA             | 30                            | R                | T               | -                    | -              | N               | -                        | -                 |
| 65458               | Hutton Road, Saltley, Birmingham   | 51/59 [C]   | <40/40 [C]           | 39/46 [C]          | Day: B4114 Saltley Viaduct bridge demolition; Eve: classic rail track laying Duddeston Mill Road; Night: Saltley canal underbridge deck | NA             | 39                            | R                | T               | -                    | -              | N               | -                        | -                 |
| 67190               | Warren Road, Washwood              | 63/73 [B]   | <40/46 [C]           | 42/53 [C]          | Day: demolition; Eve: Bromford tunnel west  | A              | 53                            | R                | T               | -                    | -              | N               | D 1                      | -                 |
|                     |                                    |   |                      |                    |   |                |                               |                  |                 |                      |                |                 |                          | CSV26-Co2         |

| Assessment location |   | Impact criteria   |                      |                    |   | Significance criteria |                               |                  |                 |                      |                |                 |                          | Significant effect |           |
|---------------------|---|---|----------------------|--------------------|---|-----------------------|-------------------------------|------------------|-----------------|----------------------|----------------|-----------------|--------------------------|--------------------|-----------|
| ID                  | Area represented                                  | Typical/highest monthly outdoor L <sub>pAeq</sub> [dB]<br>[Assessment category A/B/C] |                      |                    | Construction activity resulting in highest forecast noise levels  | Type of effect        | Number of impacts represented | Type of receptor | Receptor design | Existing environment | Unique feature | Combined impact | Impact duration [months] | Mitigation effect  |           |
|                     |   | Day<br>0700-1900  | Evening<br>1900-2300 | Night<br>2300-0700 |   |                       |                               |                  |                 |                      |                |                 |                          |                    |           |
|                     | Heath, Birmingham                                 |   |                      |                    | portal tunnel boring machine erection;<br>Night: Bromford tunnel west portal sheet piling   |                       |                               |                  |                 |                      |                |                 |                          |                    |           |
| 67370               | Common Lane,<br>Washwood Heath,<br>Birmingham     | 65/71 [A]   | <40/48 [C]           | 40/48 [B]          | Day: Washwood Heath depot reprocessing of materials;<br>Eve: Bromford tunnel west portal tunnel boring machine erection;<br>Night: Bromford tunnel west portal tunnel boring machine erection | A                     | 11                            | R                | T               | -                    | -              | N               | D 22                     | -                  | CSV26-Co2 |
| 67381               | Coronation Road,<br>Washwood Heath,<br>Birmingham | 71/77 [A]   | <40/46 [C]           | 39/48 [B]          | Day: fencing;<br>Eve: Bromford tunnel west portal tunnel boring machine erection;<br>Night: Bromford tunnel west portal sheet piling  | S                     | 32                            | R                | T               | -                    | -              | N               | D 65                     | NI                 | CSV26-Co2 |
| 67399               | Pounds Green,<br>Washwood Heath,<br>Birmingham    | 65/70 [A]   | <40/48 [C]           | 40/48 [B]          | Day: Washwood Heath depot reprocessing of materials;<br>Eve: Bromford tunnel west portal tunnel boring machine erection;<br>Night: Bromford tunnel west portal tunnel boring machine erection | A                     | 26                            | R                | T               | -                    | -              | N               | D 31                     | -                  | CSV26-Co2 |

| Assessment location |   | Impact criteria   |                      |                    | Significance criteria   |                |                               |                  |                 |                      |                |                 | Significant effect       |   |  |
|---------------------|---|---|----------------------|--------------------|---|----------------|-------------------------------|------------------|-----------------|----------------------|----------------|-----------------|--------------------------|---|--|
| ID                  | Area represented                        | Typical/highest monthly outdoor L <sub>pAeq</sub> [dB]<br>[Assessment category A/B/C] |                      |                    | Construction activity resulting in highest forecast noise levels  | Type of effect | Number of impacts represented | Type of receptor | Receptor design | Existing environment | Unique feature | Combined impact | Impact duration [months] |   |  |
|                     |   | Day<br>0700-1900  | Evening<br>1900-2300 | Night<br>2300-0700 |   |                |                               |                  |                 |                      |                |                 |                          |   |  |
| 67514               | Washwood Heath Road, Birmingham         | 56/59 [B]   | <40/43 [C]           | 37/43 [C]          | Day: Washwood Heath depot reprocessing of materials;<br>Eve: Bromford tunnel west portal tunnel boring machine erection;<br>Night: Bromford tunnel west portal tunnel boring machine erection | NA             | 59                            | R                | T               | H                    | -              | N               | -                        | - |  |
| 68349               | Bennetts Road, Birmingham               | 52/56 [B]   | <40/<40 [C]          | 39/47 [C]          | Day: demolition;<br>Eve: classic rail track recovery Washwood Heath depot;<br>Night: Bromford tunnel west portal sheet piling   | NA             | 62                            | R                | T               | -                    | -              | N               | -                        | - |  |
| 68797               | Warren Road, Washwood Heath, Birmingham | 59/67 [A]   | <40/42 [C]           | 46/53 [C]          | Day: fencing;<br>Eve: classic rail track recovery Washwood Heath depot;<br>Night: Bromford tunnel west portal sheet piling  | A              | 59                            | R                | T               | -                    | -              | N               | D 3                      | - |  |
| 69064               | Aston Church Road, Saltley, Birmingham  | 55/60 [C]   | <40/43 [C]           | 41/52 [C]          | Day: road construction;<br>Eve: classic rail track recovery Washwood Heath depot;<br>Night: Bromford tunnel west portal sheet piling  | NA             | 29                            | R                | T               | H                    | -              | N               | -                        | - |  |
| 69256               | Warren Road, Washwood Heath, Birmingham | 62/74 [A]   | 44/45 [C]            | 46/53 [C]          | Day: demolition;<br>Eve: Bromford tunnel west portal tunnel boring machine erection;  | A              | 31                            | R                | T               | -                    | -              | N               | D 3                      | - |  |

| Assessment location |   | Impact criteria   |                      |                    |   |                | Significance criteria         |                  |                 |                      |                |                 |                                    | Significant effect |           |
|---------------------|---|---|----------------------|--------------------|---|----------------|-------------------------------|------------------|-----------------|----------------------|----------------|-----------------|------------------------------------|--------------------|-----------|
| ID                  | Area represented                        | Typical/highest monthly outdoor L <sub>pAeq</sub> [dB]<br>[Assessment category A/B/C] |                      |                    | Construction activity resulting in highest forecast noise levels  | Type of effect | Number of impacts represented | Type of receptor | Receptor design | Existing environment | Unique feature | Combined impact | Impact duration [months]           | Mitigation effect  |           |
|                     |   | Day<br>0700-1900  | Evening<br>1900-2300 | Night<br>2300-0700 |   |                |                               |                  |                 |                      |                |                 |                                    |                    |           |
|                     |   |   |                      |                    | Night: Bromford tunnel west portal sheet piling   |                |                               |                  |                 |                      |                |                 |                                    |                    |           |
| 69289               | Warren Road, Washwood Heath, Birmingham | 61/67 [A]   | 41/46 [C]            | 46/56 [C]          | Day: fencing;<br>Eve: classic rail track recovery Washwood Heath depot;<br>Night: Bromford tunnel west portal sheet piling  | S              | 23                            | R                | T               | -                    | -              | N               | D <sub>2</sub> ;<br>N <sub>1</sub> | NI                 | CSV26-Co2 |
| 69374               | Washwood Heath Road, Birmingham         | 55/59 [B]   | <40/40 [C]           | 41/48 [C]          | Day: demolition;<br>Eve: classic rail track recovery Washwood Heath depot;<br>Night: Bromford tunnel west portal sheet piling   | NA             | 22                            | R                | T               | H                    | -              | N               | -                                  | -                  |           |
| 69609               | Washwood Heath Road, Birmingham         | 54/58 [C]   | <40/40 [C]           | 41/51 [C]          | Day: Washwood Heath depot landscaping;<br>Eve: classic rail track recovery Washwood Heath depot;<br>Night: Bromford tunnel west portal sheet piling                         | NA             | 74                            | R                | T               | H                    | -              | N               | -                                  | -                  |           |
| 72891               | Drews Lane, Birmingham                  | 64/68 [C]   | <40/46 [C]           | 39/46 [C]          | Day: Washwood Heath depot reprocessing of materials;<br>Eve: Bromford tunnel west portal tunnel boring machine erection;<br>Night: Bromford tunnel west portal sheet piling | NA             | 21                            | R                | T               | H                    | -              | N               | -                                  | -                  |           |
| 72929               | Drews Lane, Birmingham                  | 66/72 [C]   | <40/48 [C]           | 41/48 [C]          | Day: Washwood Heath depot   | NA             | 16                            | R                | T               | H                    | -              | N               | -                                  | -                  |           |

| Assessment location |                             | Impact criteria   |                      |                    | Significance criteria  |                |                               |                  |                 |                      |                |                 | Significant effect       |                   |  |
|---------------------|-----------------------------|---|----------------------|--------------------|--|----------------|-------------------------------|------------------|-----------------|----------------------|----------------|-----------------|--------------------------|-------------------|--|
| ID                  | Area represented            | Typical/highest monthly outdoor L <sub>pAeq</sub> [dB]<br>[Assessment category A/B/C] |                      |                    | Construction activity resulting in highest forecast noise levels   | Type of effect | Number of impacts represented | Type of receptor | Receptor design | Existing environment | Unique feature | Combined impact | Impact duration [months] | Mitigation effect |  |
|                     |                             | Day<br>0700-1900  | Evening<br>1900-2300 | Night<br>2300-0700 |  |                |                               |                  |                 |                      |                |                 |                          |                   |  |
|                     |                             |   |                      |                    | reprocessing of materials;<br>Eve: Bromford tunnel west portal tunnel boring machine erection;<br>Night: Bromford tunnel west portal tunnel boring machine erection                        |                |                               |                  |                 |                      |                |                 |                          |                   |  |
| 74077               | Northleigh Road, Birmingham | 55/60 [A]   | <40/45 [B]           | 39/45 [C]          | Day: Washwood Heath depot buildings substructure;<br>Eve: Bromford tunnel west portal tunnel boring machine erection;<br>Night: Bromford tunnel west portal tunnel boring machine erection | NA             | 120                           | R                | T               | -                    | -              | N               | -                        | -                 |  |
| 74286               | Drews Lane, Birmingham      | 57/63 [C]   | 45/46 [C]            | 44/46 [C]          | Day: Washwood Heath depot buildings substructure;<br>Eve: Bromford tunnel west portal tunnel finishes;<br>Night: Bromford tunnel west portal tunnel finishes                               | NA             | 45                            | R                | T               | H                    | -              | N               | -                        | -                 |  |
| 74502               | Drews Lane, Birmingham      | 57/62 [C]   | 42/46 [C]            | 42/46 [C]          | Day: Washwood Heath depot buildings substructure;<br>Eve: Bromford tunnel west portal tunnel boring machine erection;<br>Night: Bromford tunnel west                                       | NA             | 29                            | R                | T               | H                    | -              | N               | -                        | -                 |  |

| Assessment location |                        | Impact criteria   |                      |                    | Significance criteria   |                |                               |                  |                 |                      |                |                 | Significant effect       |                   |           |
|---------------------|------------------------|---|----------------------|--------------------|---|----------------|-------------------------------|------------------|-----------------|----------------------|----------------|-----------------|--------------------------|-------------------|-----------|
| ID                  | Area represented       | Typical/highest monthly outdoor L <sub>pAeq</sub> [dB]<br>[Assessment category A/B/C] |                      |                    | Construction activity resulting in highest forecast noise levels  | Type of effect | Number of impacts represented | Type of receptor | Receptor design | Existing environment | Unique feature | Combined impact | Impact duration [months] | Mitigation effect |           |
|                     |                        | Day<br>0700-1900  | Evening<br>1900-2300 | Night<br>2300-0700 |   |                |                               |                  |                 |                      |                |                 |                          |                   |           |
|                     |                        |   |                      |                    | portal tunnel boring machine erection   |                |                               |                  |                 |                      |                |                 |                          |                   |           |
| 75140               | Drews Lane, Birmingham | 56/61 [A]   | 41/43 [B]            | 40/43 [C]          | Day: Washwood Heath depot buildings substructure;<br>Eve: Bromford tunnel west portal tunnel boring machine erection;<br>Night: Bromford tunnel west portal tunnel boring machine erection    | NA             | 20                            | R                | T               | -                    | -              | N               | -                        | -                 |           |
| 75599               | Drews Lane, Birmingham | 60/68 [A]   | 43/52 [B]            | 43/52 [C]          | Day: Washwood Heath depot buildings substructure;<br>Eve: Bromford tunnel west portal tunnel boring machine erection;<br>Night: Bromford tunnel west portal tunnel boring machine erection    | A              | 18                            | R                | T               | -                    | -              | N               | D 6                      | -                 | CSV26-Co1 |
| 75669               | Drews Lane, Birmingham | 64/71 [A]   | 44/53 [B]            | 44/53 [C]          | Day: Washwood Heath depot reprocessing of materials;<br>Eve: Bromford tunnel west portal tunnel boring machine erection;<br>Night: Bromford tunnel west portal tunnel boring machine erection | A              | 12                            | R                | T               | -                    | -              | N               | D 24                     | -                 | CSV26-Co1 |

| Assessment location |                        | Impact criteria   |                      |                    | Significance criteria  |                |                               |                  |                 |                      |                |                 | Significant effect       |   |           |
|---------------------|------------------------|---|----------------------|--------------------|--|----------------|-------------------------------|------------------|-----------------|----------------------|----------------|-----------------|--------------------------|---|-----------|
| ID                  | Area represented       | Typical/highest monthly outdoor L <sub>pAeq</sub> [dB]<br>[Assessment category A/B/C] |                      |                    | Construction activity resulting in highest forecast noise levels   | Type of effect | Number of impacts represented | Type of receptor | Receptor design | Existing environment | Unique feature | Combined impact | Impact duration [months] |   |           |
|                     |                        | Day<br>0700-1900  | Evening<br>1900-2300 | Night<br>2300-0700 |  |                |                               |                  |                 |                      |                |                 |                          |   |           |
| 75715               | Drews Lane, Birmingham | 62/69 [A]   | 45/54 [B]            | 45/54 [C]          | Day: Washwood Heath depot watercourse diversion;<br>Eve: Bromford tunnel west portal tunnel boring machine erection;<br>Night: Bromford tunnel west portal tunnel boring machine erection  | A              | 11                            | R                | T               | -                    | -              | N               | D 8                      | - | CSV26-Co1 |
| 75755               | Drews Lane, Birmingham | 61/66 [C]   | 43/51 [C]            | 43/51 [C]          | Day: Washwood Heath depot watercourse diversion;<br>Eve: Bromford tunnel west portal tunnel boring machine erection;<br>Night: Bromford tunnel west portal tunnel boring machine erection  | NA             | 26                            | R                | T               | H                    | -              | N               | -                        | - |           |
| 75816               | Drews Lane, Birmingham | 59/67 [C]   | 41/49 [C]            | 41/49 [C]          | Day: Washwood Heath depot buildings substructure;<br>Eve: Bromford tunnel west portal tunnel boring machine erection;<br>Night: Bromford tunnel west portal tunnel boring machine erection | NA             | 23                            | R                | T               | H                    | -              | N               | -                        | - |           |
| 75902               | Drews Lane, Birmingham | 67/72 [C]   | 43/52 [C]            | 44/52 [C]          | Day: Washwood Heath depot reprocessing of materials;<br>Eve: Bromford tunnel west  | NA             | 18                            | R                | T               | H                    | -              | N               | -                        | - |           |

| Assessment location |                              | Impact criteria   |                      |                    |   | Significance criteria |                               |                  |                 |                      |                |                 | Significant effect       |                   |  |
|---------------------|------------------------------|---|----------------------|--------------------|---|-----------------------|-------------------------------|------------------|-----------------|----------------------|----------------|-----------------|--------------------------|-------------------|--|
| ID                  | Area represented             | Typical/highest monthly outdoor L <sub>pAeq</sub> [dB]<br>[Assessment category A/B/C] |                      |                    | Construction activity resulting in highest forecast noise levels  | Type of effect        | Number of impacts represented | Type of receptor | Receptor design | Existing environment | Unique feature | Combined impact | Impact duration [months] | Mitigation effect |  |
|                     |                              | Day<br>0700-1900  | Evening<br>1900-2300 | Night<br>2300-0700 |   |                       |                               |                  |                 |                      |                |                 |                          |                   |  |
|                     |                              |   |                      |                    | portal tunnel boring machine erection;<br>Night: Bromford tunnel west portal tunnel boring machine erection   |                       |                               |                  |                 |                      |                |                 |                          |                   |  |
| 75944               | Ingleton Road, Birmingham    | 59/63 [A]   | 40/50 [B]            | 41/50 [C]          | Day: Washwood Heath depot buildings substructure;<br>Eve: Bromford tunnel west portal tunnel boring machine erection;<br>Night: Bromford tunnel west portal tunnel boring machine erection    | NA                    | 37                            | R                | T               | -                    | -              | N               | -                        | -                 |  |
| 76063               | Drews Lane, Birmingham       | 70/75 [C]   | 43/52 [C]            | 44/52 [C]          | Day: Washwood Heath depot reprocessing of materials;<br>Eve: Bromford tunnel west portal tunnel boring machine erection;<br>Night: Bromford tunnel west portal tunnel boring machine erection | NA                    | 9                             | R                | T               | H                    | -              | N               | -                        | -                 |  |
| 700500              | Bordesley Street, Birmingham | 65/75 [B]   | -                    | 40/43 [C]          | Day: utility diversions;<br>Night: Curzon Street No.3 viaduct deck  | A                     | 10                            | R                | T               | H                    | -              | N               | D 7                      | -                 |  |
| 700501              | Albert Street, Birmingham    | 68/75 [C]   | -                    | 50/53 [C]          | Day: street scene works;<br>Night: Curzon Street No.3   | NA                    | 335                           | R                | T               | H                    | -              | N               | -                        | -                 |  |

| Assessment location |   | Impact criteria   |                      |                    |   | Significance criteria |                               |                  |                 |                      |                |                 | Significant effect       |                   |           |
|---------------------|---|---|----------------------|--------------------|---|-----------------------|-------------------------------|------------------|-----------------|----------------------|----------------|-----------------|--------------------------|-------------------|-----------|
| ID                  | Area represented  | Typical/highest monthly outdoor L <sub>pAeq</sub> [dB]<br>[Assessment category A/B/C] |                      |                    | Construction activity resulting in highest forecast noise levels  | Type of effect        | Number of impacts represented | Type of receptor | Receptor design | Existing environment | Unique feature | Combined impact | Impact duration [months] | Mitigation effect |           |
|                     |   | Day<br>0700-1900  | Evening<br>1900-2300 | Night<br>2300-0700 |   |                       |                               |                  |                 |                      |                |                 |                          |                   |           |
|                     |   |   |                      |                    | viaduct deck  |                       |                               |                  |                 |                      |                |                 |                          |                   |           |
| 700502              | Jennens Court flats, Etna Street, Birmingham              | 64/70 [A]   | -                    | 47/50 [C]          | Day: demolition;<br>Night: Curzon Street No.3 viaduct deck  | A                     | 1                             | R                | T               | -                    | -              | N               | D 20                     | -                 | CSV26-Co6 |
| 700509              | Albion Vaults Public House, Cato Street North, Birmingham | 54/62 [A]   | 40/44 [B]            | 41/50 [C]          | Day: B4114 Saltley Viaduct bridge demolition;<br>Eve: classic rail track laying Duddeston Mill Road;<br>Night: Saltley canal underbridge deck   | NA                    | 2                             | R                | T               | -                    | -              | N               | -                        | -                 |           |
| 700513              | Common Lane, Birmingham                                   | 70/83 [A]   | <40/45 [C]           | 43/54 [B]          | Day: utility diversions;<br>Eve: Bromford tunnel west portal tunnel boring machine erection;<br>Night: Bromford tunnel west portal sheet piling   | S                     | 16                            | R                | T               | -                    | -              | N               | D 7;<br>N 1              | NI                | CSV26-Co2 |
| 700515              | Drews Lane, Birmingham                                    | 65/71 [C]   | <40/48 [C]           | 40/48 [C]          | Day: Washwood Heath depot reprocessing of materials;<br>Eve: Bromford tunnel west portal tunnel boring machine erection;<br>Night: Bromford tunnel west portal tunnel boring machine erection | NA                    | 4                             | R                | T               | H                    | -              | N               | -                        | -                 |           |
| 700517              | Drews Lane, Birmingham                                    | 67/74 [C]   | 42/51 [C]            | 43/51 [C]          | Day: Washwood Heath depot reprocessing of materials;  | NA                    | 10                            | R                | T               | H                    | -              | N               | -                        | -                 |           |

| Assessment location |                             | Impact criteria   |                      |                    |   | Significance criteria |                               |                  |                 |                      |                |                 |                          | Significant effect |  |
|---------------------|-----------------------------|---|----------------------|--------------------|---|-----------------------|-------------------------------|------------------|-----------------|----------------------|----------------|-----------------|--------------------------|--------------------|--|
| ID                  | Area represented            | Typical/highest monthly outdoor L <sub>pAeq</sub> [dB]<br>[Assessment category A/B/C] |                      |                    | Construction activity resulting in highest forecast noise levels  | Type of effect        | Number of impacts represented | Type of receptor | Receptor design | Existing environment | Unique feature | Combined impact | Impact duration [months] | Mitigation effect  |  |
|                     |                             | Day<br>0700-1900  | Evening<br>1900-2300 | Night<br>2300-0700 |   |                       |                               |                  |                 |                      |                |                 |                          |                    |  |
|                     |                             |   |                      |                    | Eve: Bromford tunnel west portal tunnel boring machine erection;<br>Night: Bromford tunnel west portal tunnel boring machine erection   |                       |                               |                  |                 |                      |                |                 |                          |                    |  |
| 700518              | Northleigh Road, Birmingham | 61/65 [A]   | <40/47 [B]           | 40/47 [C]          | Day: Washwood Heath depot reprocessing of materials;<br>Eve: Bromford tunnel west portal tunnel boring machine erection;<br>Night: Bromford tunnel west portal tunnel boring machine erection | NA                    | 4                             | R                | T               | -                    | -              | N               | -                        | -                  |  |
| 700519              | Northleigh Road, Birmingham | 58/63 [A]   | <40/46 [B]           | 39/46 [C]          | Day: Washwood Heath depot buildings substructure;<br>Eve: Bromford tunnel west portal tunnel boring machine erection;<br>Night: Bromford tunnel west portal tunnel boring machine erection    | NA                    | 42                            | R                | T               | -                    | -              | N               | -                        | -                  |  |
| 701037              | Malthouse Lane, Birmingham  | 48/51 [B]   | <40/<40 [C]          | <35/40 [C]         | Day: Washwood Heath depot reprocessing of materials;<br>Eve: classic rail track recovery Washwood Heath depot;<br>Night: Bromford tunnel west   | NA                    | 74                            | R                | T               | H                    | -              | N               | -                        | -                  |  |

| Assessment location |                                 | Impact criteria   |                      |                    | Significance criteria  |                |                               |                  |                 |                      |                |                 | Significant effect       |                   |
|---------------------|---------------------------------|---|----------------------|--------------------|--|----------------|-------------------------------|------------------|-----------------|----------------------|----------------|-----------------|--------------------------|-------------------|
| ID                  | Area represented                | Typical/highest monthly outdoor L <sub>pAeq</sub> [dB]<br>[Assessment category A/B/C] |                      |                    | Construction activity resulting in highest forecast noise levels   | Type of effect | Number of impacts represented | Type of receptor | Receptor design | Existing environment | Unique feature | Combined impact | Impact duration [months] | Mitigation effect |
|                     |                                 | Day<br>0700-1900  | Evening<br>1900-2300 | Night<br>2300-0700 |  |                |                               |                  |                 |                      |                |                 |                          |                   |
|                     |                                 |   |                      |                    | portal sheet piling  |                |                               |                  |                 |                      |                |                 |                          |                   |
| 701038              | Malthouse Lane, Birmingham      | 51/55 [B]   | <40/<40 [C]          | 37/45 [C]          | Day: Washwood Heath depot buildings substructure;<br>Eve: Bromford tunnel west portal tunnel boring machine erection;<br>Night: Bromford tunnel west portal sheet piling | NA             | 45                            | R                | T               | H                    | -              | N               | -                        | -                 |
| 701039              | Washwood Heath Road, Birmingham | 51/55 [C]   | <40/<40 [C]          | <35/41 [C]         | Day: Washwood Heath depot buildings substructure;<br>Eve: Bromford tunnel west portal tunnel boring machine erection;<br>Night: Bromford tunnel west portal sheet piling | NA             | 6                             | R                | T               | H                    | -              | N               | -                        | -                 |
| 701040              | Washwood Heath Road, Birmingham | 49/53 [C]   | <40/<40 [C]          | 36/43 [C]          | Day: Washwood Heath depot buildings substructure;<br>Eve: classic rail track laying Washwood Heath depot;<br>Night: Bromford tunnel west portal sheet piling             | NA             | 80                            | R                | T               | H                    | -              | N               | -                        | -                 |
| 701041              | Washwood Heath Road, Birmingham | 56/60 [C]   | <40/44 [C]           | 35/44 [C]          | Day: Washwood Heath depot reprocessing of materials;<br>Eve: Bromford tunnel west portal tunnel boring machine erection;<br>Night: Bromford tunnel west                  | NA             | 103                           | R                | T               | H                    | -              | N               | -                        | -                 |

| Assessment location |                                 | Impact criteria   |                      |                    | Significance criteria  |                |                               |                  |                 |                      |                |                 | Significant effect       |                   |  |
|---------------------|---------------------------------|---|----------------------|--------------------|--|----------------|-------------------------------|------------------|-----------------|----------------------|----------------|-----------------|--------------------------|-------------------|--|
| ID                  | Area represented                | Typical/highest monthly outdoor L <sub>pAeq</sub> [dB]<br>[Assessment category A/B/C] |                      |                    | Construction activity resulting in highest forecast noise levels   | Type of effect | Number of impacts represented | Type of receptor | Receptor design | Existing environment | Unique feature | Combined impact | Impact duration [months] | Mitigation effect |  |
|                     |                                 | Day<br>0700-1900  | Evening<br>1900-2300 | Night<br>2300-0700 |  |                |                               |                  |                 |                      |                |                 |                          |                   |  |
|                     |                                 |   |                      |                    | portal tunnel boring machine erection  |                |                               |                  |                 |                      |                |                 |                          |                   |  |
| 701042              | Washwood Heath Road, Birmingham | 60/62 [C]   | <40/41 [C]           | <35/41 [C]         | Day: Washwood Heath depot logistics and storage compound;<br>Eve: Bromford tunnel west portal tunnel boring machine erection;<br>Night: Bromford tunnel west portal tunnel boring machine erection | NA             | 37                            | R                | T               | H                    | -              | N               | -                        | -                 |  |

Table 4: Assessment of construction noise at non-residential receptors

| Assessment location |  | Impact criteria                                 |                      |                    | Construction activity resulting in highest forecast noise levels                                     | Significance criteria |                               |                  |                 |                      |                |                 |                          | Significant effect |           |
|---------------------|--|---|----------------------|--------------------|--|-----------------------|-------------------------------|------------------|-----------------|----------------------|----------------|-----------------|--------------------------|--------------------|-----------|
| ID                  | Area represented   | Typical/highest monthly outdoor $L_{pAeq}$ [dB] |                      |                    |  | Type of effect        | Number of impacts represented | Type of receptor | Receptor design | Existing environment | Unique feature | Combined impact | Impact duration [months] | Mitigation effect  |           |
|                     |  | Day<br>0700-1900                                | Evening<br>1900-2300 | Night<br>2300-0700 |  |                       |                               |                  |                 |                      |                |                 |                          |                    |           |
| 35612               | Millennium Point, and Parkside Building, Curzon Street, Birmingham               | 64/71   | <40/<40              | -                  | Day: Curzon Street station ground engineering;<br>Eve: classic rail track laying Duddeston Mill Road | B                     | 7                             | G4               | T               | -                    | -              | N               | D 71                     | -                  | CSV26-No8 |
| 35848               | Network Park industrial estate (south), Duddeston Mill Road, Saltley, Birmingham | 67/78   | -                    | -                  | Day: utility diversions  | B                     | 3                             | G5               | T               | H                    | -              | Y               | D 2                      | -                  | CSV26-No3 |
| 35948               | Network Park industrial estate (north), Duddeston Mill Road, Saltley, Birmingham | 68/85   | -                    | -                  | Day: demolition  | B                     | 6                             | G5               | T               | H                    | -              | Y               | D 2                      | -                  | CSV26-No3 |
| 36091               | Network Rail Control Centre, Duddeston Mill Road, Vauxhall, Birmingham           | 63/72   | -                    | -                  | Day: site clearance  | B                     | 1                             | G5               | T               | H                    | -              | N               | -                        | -                  |           |
| 36117               | Adderley Primary School, Arden Road, Saltley, Birmingham                         | 47/55   | 42/44                | -                  | Day: demolition;<br>Eve: classic rail track laying Duddeston Mill Road                               | B                     | 1                             | G4               | T               | -                    | -              | N               | -                        | -                  |           |
| 36117               | Retail unit, Arden Road, Saltley, Birmingham                                     | 47/55   | -                    | -                  | Day: demolition  | B                     | 1                             | G5               | T               | -                    | -              | N               | -                        | -                  |           |
| 36618               | The Bullring and surrounding buildings, Moor Street Queensway,                   | 62/72   | -                    | -                  | Day: demolition  | B                     | 39                            | G5               | T               | H                    | -              | N               | -                        | -                  |           |

| Assessment location |   | Impact criteria  |                      |                    |  |                | Significance criteria         |                  |                 |                      |                |                 |                          | Significant effect |           |
|---------------------|---|--|----------------------|--------------------|--|----------------|-------------------------------|------------------|-----------------|----------------------|----------------|-----------------|--------------------------|--------------------|-----------|
| ID                  | Area represented  | Typical/highest monthly outdoor L <sub>pAeq</sub> [dB] |                      |                    | Construction activity resulting in highest forecast noise levels | Type of effect | Number of impacts represented | Type of receptor | Receptor design | Existing environment | Unique feature | Combined impact | Impact duration [months] | Mitigation effect  |           |
|                     |   | Day<br>0700-1900                                       | Evening<br>1900-2300 | Night<br>2300-0700 |  |                |                               |                  |                 |                      |                |                 |                          |                    |           |
|                     | Birmingham  |  |                      |                    |  |                |                               |                  |                 |                      |                |                 |                          |                    |           |
| 36787               | Mount Street Business Centre, Mount Street, Birmingham                  | 60/72  | -                    | -                  | Day: site clearance  | B              | 1                             | G5               | T               | H                    | -              | N               | -                        | -                  |           |
| 37341               | Duddeston Mill Trading Estate, Duddeston Mill Road, Saltley, Birmingham | 61/67  | -                    | -                  | Day: demolition  | B              | 2                             | G5               | T               | H                    | -              | N               | -                        | -                  |           |
| 37360               | Smurfit Kappa, Mount Street, Saltley, Birmingham                        | 60/68  | -                    | -                  | Day: demolition  | B              | 7                             | G5               | T               | H                    | -              | N               | -                        | -                  |           |
| 37463               | Industrial units, Cranby Street, Birmingham                             | 62/72  | -                    | -                  | Day: B4114 Saltley Viaduct bridge demolition                     | B              | 4                             | G5               | T               | H                    | -              | N               | -                        | -                  |           |
| 37790               | Boulbee business units, Nечells Place, Birmingham                       | 58/65  | -                    | -                  | Day: demolition  | B              | 15                            | G5               | T               | H                    | -              | N               | -                        | -                  |           |
| 37938               | Safeside at Eastside, Vauxhall Road, Birmingham                         | 61/78  | 43/45                | -                  | Day: fencing; Eve: classic rail track laying Duddeston Mill Road | B              | 1                             | G4               | T               | -                    | -              | N               | D 4                      | -                  | CSV26-No6 |
| 38276               | Magistrates Court, Corporation St, Birmingham                           | 43/51  | -                    | -                  | Day: demolition  | B              | 19                            | G3               | T               | -                    | -              | N               | -                        | -                  |           |
| 38276               | West Midlands Police Service, Steelhouse                                | 43/51  | -                    | -                  | Day: demolition  | B              | 1                             | G4               | T               | -                    | -              | N               | -                        | -                  |           |

| Assessment location |   | Impact criteria  |                      |                    | Significance criteria  |                |                               |                  |                 |                      |                |                 | Significant effect       |                   |
|---------------------|---|--|----------------------|--------------------|--|----------------|-------------------------------|------------------|-----------------|----------------------|----------------|-----------------|--------------------------|-------------------|
| ID                  | Area represented  | Typical/highest monthly outdoor L <sub>pAeq</sub> [dB] |                      |                    | Construction activity resulting in highest forecast noise levels | Type of effect | Number of impacts represented | Type of receptor | Receptor design | Existing environment | Unique feature | Combined impact | Impact duration [months] | Mitigation effect |
|                     |   | Day<br>0700-1900                                       | Evening<br>1900-2300 | Night<br>2300-0700 |  |                |                               |                  |                 |                      |                |                 |                          |                   |
|                     | Lane, Birmingham  |  |                      |                    |  |                |                               |                  |                 |                      |                |                 |                          |                   |
| 38276               | Corporation Street /Bull Street / Temple Row , Birmingham | 43/51  | -                    | -                  | Day: demolition  | B              | 175                           | G5               | T               | -                    | -              | N               | -                        | -                 |
| 38592               | Container Terminals, Landor Street, Birmingham            | 59/68  | -                    | -                  | Day: demolition  | B              | 1                             | G5               | T               | H                    | -              | N               | -                        | -                 |
| 40462               | West Midlands Police, Digbeth, Birmingham                 | 55/65  | -                    | -                  | Day: demolition  | B              | 2                             | G4               | T               | H                    | -              | N               | -                        | -                 |
| 40462               | Allison Street to Moor Street Station arch, Birmingham    | 55/65  | -                    | -                  | Day: demolition  | B              | 9                             | G5               | T               | H                    | -              | N               | -                        | -                 |
| 40791               | Digbeth Civic Hall, Digbeth, Birmingham                   | 47/55  | -                    | -                  | Day: demolition  | B              | 2                             | G3               | T               | H                    | -              | N               | -                        | -                 |
| 40791               | Oxford Street / Trent Street / Milk Street, Birmingham    | 47/55  | -                    | -                  | Day: demolition  | B              | 22                            | G5               | T               | H                    | -              | N               | -                        | -                 |
| 40917               | Bordesley Street / Meriden Street, Birmingham             | 56/67  | -                    | -                  | Day: demolition  | B              | 4                             | G5               | T               | H                    | -              | N               | -                        | -                 |
| 41264               | Pickford Street / Fazeley Street, Birmingham              | 60/69  | -                    | -                  | Day: utility diversions  | B              | 7                             | G5               | T               | H                    | -              | N               | -                        | -                 |

| Assessment location |   | Impact criteria  |                      |                    |  |                | Significance criteria         |                  |                 |                      |                |                 |                          | Significant effect |           |
|---------------------|---|--|----------------------|--------------------|--|----------------|-------------------------------|------------------|-----------------|----------------------|----------------|-----------------|--------------------------|--------------------|-----------|
| ID                  | Area represented                                      | Typical/highest monthly outdoor L <sub>pAeq</sub> [dB] |                      |                    | Construction activity resulting in highest forecast noise levels | Type of effect | Number of impacts represented | Type of receptor | Receptor design | Existing environment | Unique feature | Combined impact | Impact duration [months] | Mitigation effect  |           |
|                     |   | Day<br>0700-1900                                       | Evening<br>1900-2300 | Night<br>2300-0700 |  |                |                               |                  |                 |                      |                |                 |                          |                    |           |
| 41354               | New Bartholomew Street / Bordesley Street, Birmingham | 66/75  | -                    | -                  | Day: utility diversions  | B              | 9                             | G5               | T               | H                    | -              | N               | -                        | -                  |           |
| 41588               | Andover Street, Birmingham                            | 59/71  | -                    | -                  | Day: Curzon Street station ground engineering                    | B              | 8                             | G5               | T               | H                    | -              | N               | -                        | -                  |           |
| 41993               | Taboo Cinema, Park Street, Birmingham                 | 66/78  | -                    | -                  | Day: demolition  | B              | 1                             | G3               | T               | H                    | -              | N               | D 12                     | -                  | CSV26-N11 |
| 41993               | Moor Street Station / Shaw's Passage, Birmingham      | 66/78  | -                    | -                  | Day: demolition  | B              | 8                             | G5               | T               | H                    | -              | N               | D 2                      | -                  | *         |
| 42018               | St Martins Church, Moat Lane, Birmingham              | <40/46   | -                    | -                  | Day: demolition  | B              | 1                             | G3               | T               | H                    | -              | N               | -                        | -                  |           |
| 42018               | College, Digbeth, Birmingham                          | <40/46   | -                    | -                  | Day: demolition  | B              | 1                             | G4               | T               | H                    | -              | N               | -                        | -                  |           |
| 42018               | Moat Lane and markets, Digbeth, Birmingham            | <40/46   | -                    | -                  | Day: demolition  | B              | 105                           | G5               | T               | H                    | -              | N               | -                        | -                  |           |
| 42114               | Odeon Cinema, New Street, Birmingham                  | <40/45   | -                    | -                  | Day: demolition  | B              | 1                             | G3               | T               | -                    | -              | N               | -                        | -                  |           |
| 42114               | New Street / New Street Station, Birmingham           | <40/45   | -                    | -                  | Day: demolition  | B              | 160                           | G5               | T               | -                    | -              | N               | -                        | -                  |           |
| 42269               | Carrs Lane Church and St Michaels Church, Carrs       | 63/74  | -                    | -                  | Day: demolition  | B              | 2                             | G3               | T               | H                    | -              | N               | D 5                      | -                  | CSV26-N10 |

| Assessment location |  | Impact criteria  |                      |                    | Significance criteria  |                |                               |                  |                 |                      |                |                 | Significant effect       |                   |   |
|---------------------|--|--|----------------------|--------------------|--|----------------|-------------------------------|------------------|-----------------|----------------------|----------------|-----------------|--------------------------|-------------------|---|
| ID                  | Area represented   | Typical/highest monthly outdoor L <sub>pAeq</sub> [dB] |                      |                    | Construction activity resulting in highest forecast noise levels | Type of effect | Number of impacts represented | Type of receptor | Receptor design | Existing environment | Unique feature | Combined impact | Impact duration [months] | Mitigation effect |   |
|                     |  | Day<br>0700-1900                                       | Evening<br>1900-2300 | Night<br>2300-0700 |  |                |                               |                  |                 |                      |                |                 |                          |                   |   |
|                     | Lane, Birmingham   |  |                      |                    |  |                |                               |                  |                 |                      |                |                 |                          |                   |   |
| 42269               | Carrs Lane, Birmingham   | 63/74  | -                    | -                  | Day: demolition  | B              | 48                            | G5               | T               | H                    | -              | N               | -                        | -                 |   |
| 42326               | Dale End, Birmingham   | 42/50  | -                    | -                  | Day: demolition  | B              | 17                            | G5               | T               | H                    | -              | N               | -                        | -                 |   |
| 42359               | Specsavers Opticians, New Street, Birmingham                     | 49/58  | -                    | -                  | Day: demolition  | B              | 1                             | G4               | T               | H                    | -              | N               | -                        | -                 |   |
| 42359               | High Street / Union Street, Birmingham                           | 49/58  | -                    | -                  | Day: demolition  | B              | 37                            | G5               | T               | H                    | -              | N               | -                        | -                 |   |
| 44620               | Jennens Road / Woodcock Street, Birmingham                       | 53/60  | -                    | -                  | Day: demolition  | B              | 16                            | G5               | T               | H                    | -              | N               | -                        | -                 |   |
| 45208               | University of Aston, Aston Street, Birmingham                    | 54/63  | -                    | -                  | Day: Curzon Street station ground engineering                    | B              | 4                             | G4               | T               | H                    | -              | N               | -                        | -                 |   |
| 45252               | Learning and Skills Council offices, Bartholomew Row, Birmingham | 64/72  | -                    | -                  | Day: utility diversions  | B              | 1                             | G5               | T               | -                    | -              | N               | -                        | -                 |   |
| 46410               | Central Methodist Church, Dalton Street, Birmingham              | 59/68  | -                    | -                  | Day: demolition  | B              | 1                             | G3               | T               | H                    | -              | N               | D 1                      | -                 | * |
| 46410               | Crown Hotel, Corporation Street,                                 | 59/68  | -                    | 46/49              | Day: demolition; Night: Curzon Street No.3                       | B              | 1                             | G4               | T               | H                    | -              | N               | D 1                      | -                 | * |

| Assessment location |  | Impact criteria  |                      |                    |  |                | Significance criteria         |                  |                 |                      |                |                 |                          | Significant effect |  |
|---------------------|--|--|----------------------|--------------------|--|----------------|-------------------------------|------------------|-----------------|----------------------|----------------|-----------------|--------------------------|--------------------|--|
| ID                  | Area represented   | Typical/highest monthly outdoor L <sub>pAeq</sub> [dB] |                      |                    | Construction activity resulting in highest forecast noise levels | Type of effect | Number of impacts represented | Type of receptor | Receptor design | Existing environment | Unique feature | Combined impact | Impact duration [months] | Mitigation effect  |  |
|                     |  | Day<br>0700-1900                                       | Evening<br>1900-2300 | Night<br>2300-0700 |  |                |                               |                  |                 |                      |                |                 |                          |                    |  |
|                     | Birmingham   |  |                      |                    | viaduct deck   |                |                               |                  |                 |                      |                |                 |                          |                    |  |
| 46410               | Corporation Street / Dalton Street, Birmingham                               | 59/68  | -                    | -                  | Day: demolition  | B              | 44                            | G5               | T               | H                    | -              | N               | -                        | -                  |  |
| 47091               | Garrison Centre / Freight Centre, Garrison Street, Birmingham                | 53/58  | -                    | -                  | Day: demolition  | B              | 11                            | G5               | T               | -                    | -              | N               | -                        | -                  |  |
| 48460               | River Street / Floodgate Street, Birmingham                                  | 54/60  | -                    | -                  | Day: demolition  | B              | 20                            | G5               | T               | H                    | -              | N               | -                        | -                  |  |
| 48773               | Warwick Wharf / Fazeley Street Industrial Estate, Fazeley Street, Birmingham | 60/65  | -                    | -                  | Day: Curzon Street station ground engineering                    | B              | 20                            | G5               | T               | H                    | -              | N               | -                        | -                  |  |
| 48796               | Great Barr Street / Fazeley Street, Birmingham                               | 56/60  | -                    | -                  | Day: demolition  | B              | 15                            | G5               | T               | -                    | -              | N               | -                        | -                  |  |
| 48817               | Watery Lane Middleway, Bordesley, Birmingham                                 | 59/70  | -                    | -                  | Day: road construction   | B              | 6                             | G5               | T               | H                    | -              | N               | -                        | -                  |  |
| 49490               | Vauxhall Trading Estate, Dollman Street, Birmingham                          | 58/64  | -                    | -                  | Day: demolition  | B              | 7                             | G5               | T               | H                    | -              | N               | -                        | -                  |  |
| 49870               | Heartlands Academy, Great Francis Street,                                    | 51/57  | 44/45                | -                  | Day: demolition; Eve: classic rail track laying                  | B              | 1                             | G4               | T               | H                    | -              | N               | -                        | -                  |  |

| Assessment location |   | Impact criteria  |                      |                    |   |                | Significance criteria         |                  |                 |                      |                |                 |                          | Significant effect |  |
|---------------------|---|--|----------------------|--------------------|---|----------------|-------------------------------|------------------|-----------------|----------------------|----------------|-----------------|--------------------------|--------------------|--|
| ID                  | Area represented  | Typical/highest monthly outdoor L <sub>pAeq</sub> [dB] |                      |                    | Construction activity resulting in highest forecast noise levels    | Type of effect | Number of impacts represented | Type of receptor | Receptor design | Existing environment | Unique feature | Combined impact | Impact duration [months] | Mitigation effect  |  |
|                     |   | Day<br>0700-1900                                       | Evening<br>1900-2300 | Night<br>2300-0700 |   |                |                               |                  |                 |                      |                |                 |                          |                    |  |
|                     | Birmingham  |  |                      |                    | Duddeston Mill Road   |                |                               |                  |                 |                      |                |                 |                          |                    |  |
| 49958               | Church of Christ, Great Francis Street, Birmingham                          | 53/59  | 47/49                | -                  | Day: demolition; Eve: classic rail track laying Duddeston Mill Road | B              | 1                             | G <sub>3</sub>   | T               | H                    | -              | N               | -                        | -                  |  |
| 49958               | Old Railway Yard, Great Francis Street, Birmingham                          | 53/59  | -                    | -                  | Day: demolition   | B              | 1                             | G <sub>5</sub>   | T               | H                    | -              | N               | -                        | -                  |  |
| 50110               | Warehouses, Dollman Street, Birmingham                                      | 59/70  | -                    | -                  | Day: demolition   | B              | 13                            | G <sub>5</sub>   | T               | -                    | -              | N               | -                        | -                  |  |
| 50238               | Industrial units (south), Cato Street, Birmingham                           | 56/63  | -                    | -                  | Day: demolition   | B              | 9                             | G <sub>5</sub>   | T               | H                    | -              | N               | -                        | -                  |  |
| 50284               | Inkerman Street / Dollman Street trading units, Inkerman Street, Birmingham | 55/61  | -                    | -                  | Day: B4114 Saltley Viaduct bridge demolition                        | B              | 6                             | G <sub>5</sub>   | T               | -                    | -              | N               | -                        | -                  |  |
| 50326               | Nechells Business Centre (north), Dollman Street, Birmingham                | 65/73  | -                    | -                  | Day: fencing  | B              | 9                             | G <sub>5</sub>   | T               | H                    | -              | N               | -                        | -                  |  |
| 50586               | Industrial units near Aston Circus, A4540 Lawley Middleway, Birmingham      | 58/66  | -                    | -                  | Day: utility diversions   | B              | 7                             | G <sub>5</sub>   | T               | H                    | -              | N               | -                        | -                  |  |
| 50998               | Revesby Walk, Duddeston Manor Road,   | 54/60  | -                    | -                  | Day: demolition   | B              | 6                             | G <sub>5</sub>   | T               | -                    | -              | N               | -                        | -                  |  |

| Assessment location |  | Impact criteria  |                      |                    |  |                | Significance criteria         |                  |                 |                      |                |                 |                          | Significant effect |           |
|---------------------|--|--|----------------------|--------------------|--|----------------|-------------------------------|------------------|-----------------|----------------------|----------------|-----------------|--------------------------|--------------------|-----------|
| ID                  | Area represented   | Typical/highest monthly outdoor L <sub>pAeq</sub> [dB] |                      |                    | Construction activity resulting in highest forecast noise levels             | Type of effect | Number of impacts represented | Type of receptor | Receptor design | Existing environment | Unique feature | Combined impact | Impact duration [months] | Mitigation effect  |           |
|                     |  | Day<br>0700-1900                                       | Evening<br>1900-2300 | Night<br>2300-0700 |  |                |                               |                  |                 |                      |                |                 |                          |                    |           |
|                     | Birmingham   |  |                      |                    |  |                |                               |                  |                 |                      |                |                 |                          |                    |           |
| 51047               | Duddeston Manor Road, Birmingham                                     | 49/54  | -                    | -                  | Day: demolition  | B              | 1                             | G5               | T               | H                    | -              | N               | -                        | -                  |           |
| 51535               | Commercial units, Garrison Street North, Garrison Street, Birmingham | 55/62  | -                    | -                  | Day: demolition  | B              | 5                             | G5               | T               | -                    | -              | N               | -                        | -                  |           |
| 51605               | Commercial units, Garrison Street west, Garrison Street, Birmingham  | 55/61  | -                    | -                  | Day: demolition  | B              | 2                             | G5               | T               | -                    | -              | N               | -                        | -                  |           |
| 51730               | Landor Street, Birmingham  | 57/64  | -                    | -                  | Day: demolition  | B              | 1                             | G5               | T               | -                    | -              | N               | -                        | -                  |           |
| 51868               | St. Vincents School, Vauxhall Grove, Birmingham                      | 53/63  | 44/46                | -                  | Day: demolition; Eve: classic rail track laying Duddeston Mill Road          | B              | 1                             | G4               | T               | -                    | -              | N               | D 1                      | -                  | *         |
| 51904               | Industrial units, Erskine Street, Birmingham                         | 65/79  | -                    | -                  | Day: demolition  | B              | 4                             | G5               | T               | H                    | -              | N               | D 2                      | -                  | CSV26-No5 |
| 52180               | Professional Music Technology, Lawley Middleway, Birmingham          | 67/76  | <40/<40              | -                  | Day: road construction; Eve: classic rail track recovery Duddeston Mill Road | B              | 1                             | G2               | T               | -                    | -              | N               | D 11                     | -                  | CSV26-No7 |
| 52180               | A4540 Lawley Middleway, Birmingham                                   | 67/76  | -                    | -                  | Day: road construction   | B              | 1                             | G5               | T               | -                    | -              | N               | D 2                      | -                  | *         |

| Assessment location |  | Impact criteria  |                      |                    |  |                | Significance criteria         |                  |                 |                      |                |                 |                          |                   | Significant effect |  |
|---------------------|--|--|----------------------|--------------------|--|----------------|-------------------------------|------------------|-----------------|----------------------|----------------|-----------------|--------------------------|-------------------|--------------------|--|
| ID                  | Area represented   | Typical/highest monthly outdoor L <sub>pAeq</sub> [dB] |                      |                    | Construction activity resulting in highest forecast noise levels                                       | Type of effect | Number of impacts represented | Type of receptor | Receptor design | Existing environment | Unique feature | Combined impact | Impact duration [months] | Mitigation effect |                    |  |
|                     |  | Day<br>0700-1900                                       | Evening<br>1900-2300 | Night<br>2300-0700 |  |                |                               |                  |                 |                      |                |                 |                          |                   |                    |  |
| 52220               | Gordon Franks Training, Vauxhall Road, Birmingham                            | 62/68  | <40/41               | -                  | Day: demolition;<br>Eve: classic rail track laying<br>Duddeston Mill Road                              | B              | 1                             | G <sub>4</sub>   | T               | -                    | -              | N               | -                        | -                 |                    |  |
| 52342               | Barrack Street (middle), Barrack Street, Birmingham                          | 54/60  | -                    | -                  | Day: demolition  | B              | 1                             | G <sub>5</sub>   | T               | -                    | -              | N               | -                        | -                 |                    |  |
| 52398               | Proposed new University buildings and hotel<br>Eastside Locks, Curzon Street | 62/68  | <40/<40              | 54/60              | Day: demolition;<br>Eve: classic rail track laying<br>Duddeston Mill Road                              | B              | 1                             | G <sub>4</sub>   | T               | -                    | -              | N               | D 53;<br>N 5             | -                 | CSV26-No8          |  |
| 52502               | Industrial units, Montague Way, Birmingham                                   | 60/66  | -                    | -                  | Day: road construction   | B              | 4                             | G <sub>5</sub>   | T               | H                    | -              | N               | -                        | -                 |                    |  |
| 53526               | Bloomsbury Library, Saltley Road, Birmingham                                 | 52/61  | 40/45                | -                  | Day: B4114 Saltley Viaduct bridge demolition;<br>Eve: classic rail track laying<br>Duddeston Mill Road | B              | 3                             | G <sub>4</sub>   | T               | H                    | -              | N               | -                        | -                 |                    |  |
| 53805               | Nechells Green Community Centre, Melvina Road, Birmingham                    | 52/60  | 45/47                | -                  | Day: B4114 Saltley Viaduct bridge demolition;<br>Eve: classic rail track laying<br>Duddeston Mill Road | B              | 1                             | G <sub>3</sub>   | T               | H                    | -              | N               | -                        | -                 |                    |  |
| 53805               | Little Hall Road, Birmingham   | 52/60  | -                    | -                  | Day: B4114 Saltley Viaduct bridge demolition   | B              | 1                             | G <sub>5</sub>   | T               | H                    | -              | N               | -                        | -                 |                    |  |
| 54833               | Adderley Children's  | 51/60  | 44/46                | -                  | Day: demolition;   | B              | 1                             | G <sub>4</sub>   | T               | -                    | -              | N               | D 1                      | -                 | *                  |  |

| Assessment location |   | Impact criteria  |                      |                    |   |                | Significance criteria         |                  |                 |                      |                |                 |                          | Significant effect |   |
|---------------------|---|--|----------------------|--------------------|---|----------------|-------------------------------|------------------|-----------------|----------------------|----------------|-----------------|--------------------------|--------------------|---|
| ID                  | Area represented  | Typical/highest monthly outdoor L <sub>pAeq</sub> [dB] |                      |                    | Construction activity resulting in highest forecast noise levels                                    | Type of effect | Number of impacts represented | Type of receptor | Receptor design | Existing environment | Unique feature | Combined impact | Impact duration [months] | Mitigation effect  |   |
|                     |   | Day<br>0700-1900                                       | Evening<br>1900-2300 | Night<br>2300-0700 |   |                |                               |                  |                 |                      |                |                 |                          |                    |   |
|                     | Centre, St. Saviours Road, Birmingham   |  |                      |                    | Eve: classic rail track laying Duddeston Mill Road  |                |                               |                  |                 |                      |                |                 |                          |                    |   |
| 54867               | Saltley Baptist Church, George Arthur Road, Birmingham                          | 52/60  | 43/47                | -                  | Day: B4114 Saltley Viaduct bridge demolition;<br>Eve: classic rail track laying Duddeston Mill Road | B              | 1                             | G <sub>3</sub>   | T               | -                    | -              | N               | D 3                      | -                  | * |
| 54867               | Alum Rock Road shops, Alum Rock Road, Birmingham                                | 52/60  | -                    | -                  | Day: B4114 Saltley Viaduct bridge demolition  | B              | 6                             | G <sub>5</sub>   | T               | -                    | -              | N               | -                        | -                  |   |
| 55784               | Parish of Saltley and Shaw Hill Church, St Saviours Road, Birmingham            | 49/55  | 40/45                | -                  | Day: demolition;<br>Eve: classic rail track laying Duddeston Mill Road                              | B              | 1                             | G <sub>3</sub>   | T               | -                    | -              | N               | -                        | -                  |   |
| 57122               | Duddeston Mill Trading Estate (North), Duddeston Mill Road, Saltley, Birmingham | 61/74  | -                    | -                  | Day: site mobilisation  | B              | 5                             | G <sub>5</sub>   | T               | H                    | -              | N               | -                        | -                  |   |
| 57184               | Duddeston Mill Trading Estate (South), Duddeston Mill Road, Saltley, Birmingham | 58/64  | -                    | -                  | Day: demolition   | B              | 11                            | G <sub>5</sub>   | T               | H                    | -              | N               | -                        | -                  |   |
| 57220               | Adderley Trading Estate, Adderley Road, Birmingham                              | 57/63  | -                    | -                  | Day: demolition   | B              | 13                            | G <sub>5</sub>   | T               | -                    | -              | N               | -                        | -                  |   |

| Assessment location |   | Impact criteria  |                      |                    | Significance criteria   |                |                               |                  |                 |                      |                |                 | Significant effect       |                   |  |
|---------------------|---|--|----------------------|--------------------|---|----------------|-------------------------------|------------------|-----------------|----------------------|----------------|-----------------|--------------------------|-------------------|--|
| ID                  | Area represented  | Typical/highest monthly outdoor L <sub>pAeq</sub> [dB] |                      |                    | Construction activity resulting in highest forecast noise levels            | Type of effect | Number of impacts represented | Type of receptor | Receptor design | Existing environment | Unique feature | Combined impact | Impact duration [months] | Mitigation effect |  |
|                     |   | Day<br>0700-1900                                       | Evening<br>1900-2300 | Night<br>2300-0700 |   |                |                               |                  |                 |                      |                |                 |                          |                   |  |
| 57289               | Madina Masjid, St Saviours Road, Birmingham               | 57/63  | 48/52                | -                  | Day: utility diversions; Eve: classic rail track laying Duddeston Mill Road | B              | 1                             | G <sub>3</sub>   | T               | H                    | -              | N               | -                        | -                 |  |
| 57289               | Adderley Children's Centre, St. Saviours Road, Birmingham | 57/63  | 48/52                | -                  | Day: utility diversions; Eve: classic rail track laying Duddeston Mill Road | B              | 1                             | G <sub>4</sub>   | T               | H                    | -              | N               | -                        | -                 |  |
| 57289               | Adderley Road, Birmingham                                 | 57/63  | -                    | -                  | Day: utility diversions   | B              | 2                             | G <sub>5</sub>   | T               | H                    | -              | N               | -                        | -                 |  |
| 57381               | Adderley Road, Birmingham                                 | 56/68  | -                    | -                  | Day: utility diversions   | B              | 1                             | G <sub>5</sub>   | T               | H                    | -              | N               | -                        | -                 |  |
| 57499               | Rea Business Park, Inkerman Street, Birmingham            | 65/74  | -                    | -                  | Day: demolition   | B              | 7                             | G <sub>5</sub>   | T               | H                    | -              | N               | -                        | -                 |  |
| 58835               | Community Hall, Washwood Heath Road, Birmingham           | 47/53  | <40/<40              | -                  | Day: demolition; Eve: classic rail track recovery Washwood Heath depot      | B              | 1                             | G <sub>3</sub>   | T               | -                    | -              | N               | -                        | -                 |  |
| 59457               | Nechells Methodist Church, Nechells Park Road, Birmingham | 48/56  | 40/43                | -                  | Day: demolition; Eve: classic rail track recovery Washwood Heath depot      | B              | 1                             | G <sub>3</sub>   | T               | -                    | -              | N               | -                        | -                 |  |
| 59457               | Trevor Street West, Birmingham                            | 48/56  | -                    | -                  | Day: demolition   | B              | 4                             | G <sub>5</sub>   | T               | -                    | -              | N               | -                        | -                 |  |
| 59796               | Mount Street Business Centre, Mount Street,               | 57/68  | -                    | -                  | Day: River Rea watercourse demolition                                       | B              | 38                            | G <sub>5</sub>   | T               | -                    | -              | N               | -                        | -                 |  |

| Assessment location |  | Impact criteria  |                      |                    |  |                | Significance criteria         |                  |                 |                      |                |                 |                          | Significant effect |           |
|---------------------|--|--|----------------------|--------------------|--|----------------|-------------------------------|------------------|-----------------|----------------------|----------------|-----------------|--------------------------|--------------------|-----------|
| ID                  | Area represented   | Typical/highest monthly outdoor L <sub>pAeq</sub> [dB] |                      |                    | Construction activity resulting in highest forecast noise levels                                 | Type of effect | Number of impacts represented | Type of receptor | Receptor design | Existing environment | Unique feature | Combined impact | Impact duration [months] | Mitigation effect  |           |
|                     |  | Day<br>0700-1900                                       | Evening<br>1900-2300 | Night<br>2300-0700 |  |                |                               |                  |                 |                      |                |                 |                          |                    |           |
|                     | Nechells, Birmingham   |  |                      |                    |  |                |                               |                  |                 |                      |                |                 |                          |                    |           |
| 59937               | Centre Link Industrial Estate, St. Clements Road, Birmingham | 53/60  | -                    | -                  | Day: River Rea watercourse demolition  | B              | 4                             | G5               | T               | -                    | -              | N               | -                        | -                  |           |
| 60102               | Saltley Business Park, Dorset Road, Saltley, Birmingham      | 65/80  | -                    | -                  | Day: fencing   | B              | 4                             | G5               | T               | -                    | -              | Y               | D 1                      | -                  | CSV26-No3 |
| 60182               | Aston Church Road / A47 Heartlands Parkway, Birmingham       | 58/68  | -                    | -                  | Day: site clearance  | B              | 1                             | G5               | T               | H                    | -              | N               | -                        | -                  |           |
| 61166               | St Saviours Primary School, Alum Rock Road, Birmingham       | 58/68  | <40/43               | -                  | Day: B4114 Saltley Viaduct bridge demolition; Eve: classic rail track laying Duddeston Mill Road | B              | 1                             | G4               | T               | H                    | -              | N               | -                        | -                  |           |
| 61166               | Alum Rock Road, Birmingham                                   | 58/68  | -                    | -                  | Day: B4114 Saltley Viaduct bridge demolition   | B              | 9                             | G5               | T               | H                    | -              | N               | -                        | -                  |           |
| 62056               | Phillimore Road / Washwood Heath Road, Birmingham            | 54/65  | -                    | -                  | Day: B4114 Saltley Viaduct bridge demolition   | B              | 1                             | G5               | T               | H                    | -              | N               | -                        | -                  |           |
| 62306               | Industrial units, Cato Street North, Birmingham              | 61/68  | -                    | -                  | Day: B4114 Saltley viaduct piling  | B              | 12                            | G5               | T               | H                    | -              | N               | -                        | -                  |           |
| 62459               | Industrial units, Devon Street/Cato Street,                  | 52/60  | -                    | -                  | Day: demolition  | B              | 10                            | G5               | T               | H                    | -              | N               | -                        | -                  |           |

| Assessment location |  | Impact criteria  |                      |                    |  |                | Significance criteria         |                  |                 |                      |                |                 |                          | Significant effect |  |
|---------------------|--|--|----------------------|--------------------|--|----------------|-------------------------------|------------------|-----------------|----------------------|----------------|-----------------|--------------------------|--------------------|--|
| ID                  | Area represented   | Typical/highest monthly outdoor L <sub>pAeq</sub> [dB] |                      |                    | Construction activity resulting in highest forecast noise levels                                 | Type of effect | Number of impacts represented | Type of receptor | Receptor design | Existing environment | Unique feature | Combined impact | Impact duration [months] | Mitigation effect  |  |
|                     |  | Day<br>0700-1900                                       | Evening<br>1900-2300 | Night<br>2300-0700 |  |                |                               |                  |                 |                      |                |                 |                          |                    |  |
|                     | Birmingham   |  |                      |                    |  |                |                               |                  |                 |                      |                |                 |                          |                    |  |
| 62720               | Mainstream 47 Industrial Park, Mainstream Way, Birmingham                        | 62/71  | -                    | -                  | Day: B4114 Saltley Viaduct bridge demolition   | B              | 15                            | G5               | T               | H                    | -              | N               | -                        | -                  |  |
| 63581               | Dunton Trading Estate / Mount Street Industrial Estate, Mount Street, Birmingham | 57/67  | -                    | -                  | Day: site clearance  | B              | 24                            | G5               | T               | H                    | -              | N               | -                        | -                  |  |
| 64317               | Heartlands Club, Aston Church Road, Saltley                                      | 55/64  | 45/49                | -                  | Day: site clearance; Eve: classic rail track recovery Washwood Heath depot                       | B              | 1                             | G3               | T               | H                    | -              | N               | -                        | -                  |  |
| 64317               | Mount Street Business Centre, Mount Street, Nечells, Birmingham                  | 55/64  | -                    | -                  | Day: site clearance  | B              | 17                            | G5               | T               | H                    | -              | N               | -                        | -                  |  |
| 64548               | Nечells Play Centre, Mount Street, Nечells, Birmingham                           | 53/60  | 43/47                | -                  | Day: demolition; Eve: classic rail track recovery Washwood Heath depot                           | B              | 1                             | G4               | T               | -                    | -              | N               | -                        | -                  |  |
| 64548               | Community Offices, Aston Church Road, Nечells, Birmingham                        | 53/60  | -                    | -                  | Day: demolition  | B              | 1                             | G5               | T               | -                    | -              | N               | -                        | -                  |  |
| 65458               | Anjuman-E-Naqeebul Islam Mosque, Washwood Heath Road, Birmingham                 | 51/59  | <40/40               | -                  | Day: B4114 Saltley Viaduct bridge demolition; Eve: classic rail track laying Duddeston Mill Road | B              | 1                             | G3               | T               | -                    | -              | N               | -                        | -                  |  |

| Assessment location |  | Impact criteria  |                      |                    | Significance criteria   |                |                               |                  |                 |                      |                |                 | Significant effect       |                   |  |
|---------------------|--|--|----------------------|--------------------|---|----------------|-------------------------------|------------------|-----------------|----------------------|----------------|-----------------|--------------------------|-------------------|--|
| ID                  | Area represented   | Typical/highest monthly outdoor L <sub>pAeq</sub> [dB] |                      |                    | Construction activity resulting in highest forecast noise levels                                    | Type of effect | Number of impacts represented | Type of receptor | Receptor design | Existing environment | Unique feature | Combined impact | Impact duration [months] | Mitigation effect |  |
|                     |  | Day<br>0700-1900                                       | Evening<br>1900-2300 | Night<br>2300-0700 |   |                |                               |                  |                 |                      |                |                 |                          |                   |  |
| 65458               | Al Huda Girls School and Gate Medical Centre, Washwood Heath Road, Saltley, Birmingham | 51/59  | <40/40               | -                  | Day: B4114 Saltley Viaduct bridge demolition;<br>Eve: classic rail track laying Duddeston Mill Road | B              | 2                             | G <sub>4</sub>   | T               | -                    | -              | N               | -                        | -                 |  |
| 65620               | Industrial Units, Devon Street (South), Birmingham                                     | 61/69  | -                    | -                  | Day: demolition   | B              | 3                             | G <sub>5</sub>   | T               | H                    | -              | N               | -                        | -                 |  |
| 66331               | Industrial Estate, Bromford Lane, Washwood Heath, Birmingham                           | 41/47  | -                    | -                  | Day: Washwood Heath depot buildings substructure  | B              | 4                             | G <sub>5</sub>   | T               | H                    | -              | N               | -                        | -                 |  |
| 66445               | Star Park South, Heartlands Parkway, Birmingham  | 58/65  | 52/56                | -                  | Day: demolition;<br>Eve: classic rail track laying Washwood Heath depot                             | B              | 18                            | G <sub>3</sub>   | T               | H                    | -              | N               | -                        | -                 |  |
| 66445               | Star Park, Heartlands Parkway, Birmingham  | 58/65  | -                    | -                  | Day: demolition   | B              | 1                             | G <sub>5</sub>   | T               | H                    | -              | N               | -                        | -                 |  |
| 66559               | Car showroom (Star Park South), Heartlands Parkway, Birmingham                         | 62/73  | -                    | -                  | Day: utility diversions   | B              | 1                             | G <sub>5</sub>   | T               | H                    | -              | N               | -                        | -                 |  |
| 67399               | Council Office, Common Lane, Birmingham  | 65/70  | -                    | -                  | Day: Washwood Heath depot reprocessing of materials   | B              | 1                             | G <sub>5</sub>   | T               | -                    | -              | N               | -                        | -                 |  |
| 67514               | Council Office, Washwood Heath Road, Birmingham  | 56/59  | -                    | -                  | Day: Washwood Heath depot reprocessing of materials   | B              | 1                             | G <sub>5</sub>   | T               | H                    | -              | N               | -                        | -                 |  |

| Assessment location |   | Impact criteria  |                      |                    |  |                | Significance criteria         |                  |                 |                      |                |                 |                          |                   | Significant effect |  |
|---------------------|---|--|----------------------|--------------------|--|----------------|-------------------------------|------------------|-----------------|----------------------|----------------|-----------------|--------------------------|-------------------|--------------------|--|
| ID                  | Area represented  | Typical/highest monthly outdoor L <sub>pAeq</sub> [dB] |                      |                    | Construction activity resulting in highest forecast noise levels                 | Type of effect | Number of impacts represented | Type of receptor | Receptor design | Existing environment | Unique feature | Combined impact | Impact duration [months] | Mitigation effect |                    |  |
|                     |   | Day<br>0700-1900                                       | Evening<br>1900-2300 | Night<br>2300-0700 |  |                |                               |                  |                 |                      |                |                 |                          |                   |                    |  |
| 68349               | Car Dealer, Bennetts Road, Birmingham                                     | 52/56  | -                    | -                  | Day: demolition  | B              | 1                             | G5               | T               | -                    | -              | N               | -                        | -                 |                    |  |
| 69064               | Shops, Aston Church Road, Saltley, Birmingham                             | 55/60  | -                    | -                  | Day: road construction   | B              | 4                             | G5               | T               | H                    | -              | N               | -                        | -                 |                    |  |
| 69256               | Leigh Junior, Infant and Nursery School, Leigh Road, Birmingham           | 60/67  | 44/45                | -                  | Day: demolition; Eve: Bromford tunnel west portal tunnel boring machine erection | B              | 1                             | G4               | T               | -                    | -              | N               | D 54                     | -                 | CSV26-No1          |  |
| 69374               | Parish of Washwood Heath Church and Hall, Washwood Heath Road, Birmingham | 55/59  | <40/40               | -                  | Day: demolition; Eve: classic rail track recovery Washwood Heath depot           | B              | 2                             | G3               | T               | H                    | -              | N               | -                        | -                 |                    |  |
| 69846               | Hasanat College, Leigh Road, Washwood Heath, Birmingham                   | 61/74  | <40/45               | -                  | Day: fencing; Eve: classic rail track laying Washwood Heath depot                | B              | 1                             | G4               | T               | -                    | -              | N               | D 49                     | -                 | CSV26-No1          |  |
| 71826               | Brewery, Gravelly Industrial Park, Birmingham                             | 61/68  | -                    | -                  | Day: Washwood Heath depot buildings substructure                                 | B              | 1                             | G5               | T               | H                    | -              | N               | -                        | -                 |                    |  |
| 72552               | Industrial units, Gravelly Industrial Park (south), Birmingham            | 59/66  | -                    | -                  | Day: demolition  | B              | 25                            | G5               | T               | H                    | -              | N               | -                        | -                 |                    |  |
| 74286               | Office / retail premises, Drews Lane, Birmingham                          | 57/63  | -                    | -                  | Day: Washwood Heath depot buildings substructure                                 | B              | 1                             | G5               | T               | H                    | -              | N               | -                        | -                 |                    |  |

| Assessment location |  | Impact criteria  |                      |                    |  |                | Significance criteria         |                  |                 |                      |                |                 |                          | Significant effect |           |
|---------------------|--|--|----------------------|--------------------|--|----------------|-------------------------------|------------------|-----------------|----------------------|----------------|-----------------|--------------------------|--------------------|-----------|
| ID                  | Area represented   | Typical/highest monthly outdoor L <sub>pAeq</sub> [dB] |                      |                    | Construction activity resulting in highest forecast noise levels   | Type of effect | Number of impacts represented | Type of receptor | Receptor design | Existing environment | Unique feature | Combined impact | Impact duration [months] | Mitigation effect  |           |
|                     |  | Day<br>0700-1900                                       | Evening<br>1900-2300 | Night<br>2300-0700 |  |                |                               |                  |                 |                      |                |                 |                          |                    |           |
| 75527               | Industrial units, Drews Lane, Birmingham                       | 67/73  | -                    | -                  | Day: Washwood Heath depot hard landscaping   | B              | 4                             | G5               | T               | -                    | -              | N               | -                        | -                  |           |
| 75715               | Retail unit, Drews Lane, Birmingham                            | 62/69  | -                    | -                  | Day: Washwood Heath depot watercourse diversion  | B              | 1                             | G5               | T               | -                    | -              | N               | -                        | -                  |           |
| 75902               | Allotment Club House, Drews Lane, Birmingham                   | 67/72  | 43/52                | -                  | Day: Washwood Heath depot reprocessing of materials; Eve: Bromford tunnel west portal tunnel boring machine erection | B              | 1                             | G4               | T               | H                    | -              | N               | -                        | -                  |           |
| 76063               | Local shops, Drews Lane, Birmingham                            | 70/75  | -                    | -                  | Day: Washwood Heath depot reprocessing of materials  | B              | 1                             | G5               | T               | H                    | -              | N               | -                        | -                  |           |
| 700500              | Polish Catholic Association, Bordesley Street, Birmingham      | 65/75  | -                    | -                  | Day: utility diversions  | B              | 1                             | G3               | T               | H                    | -              | N               | D 12                     | -                  | CSV26-N12 |
| 700500              | Café, Bordesley Street, Birmingham                             | 65/75  | -                    | -                  | Day: utility diversions  | B              | 2                             | G5               | T               | H                    | -              | N               | -                        | -                  |           |
| 700503              | Hotel La Tour, Moor Street Queensway, Birmingham               | 64/78  | -                    | 45/48              | Day: utility diversions; Night: Curzon Street No.3 viaduct deck  | B              | 1                             | G4               | T               | H                    | -              | N               | D 3                      | -                  | CSV26-N09 |
| 700504              | Seventh Day Adventist Church, Windsor Street South, Birmingham | 61/68  | <40/<40              | -                  | Day: utility diversions; Eve: classic rail track recovery Duddeston Mill Road  | B              | 1                             | G3               | T               | -                    | -              | N               | -                        | -                  |           |
| 700504              | Al-Birr independent School, Windsor Street                     | 61/68  | <40/<40              | -                  | Day: utility diversions; Eve: classic rail track recovery  | B              | 1                             | G4               | T               | -                    | -              | N               | -                        | -                  |           |

| Assessment location |  | Impact criteria  |                      |                    | Significance criteria  |                |                               |                  |                 |                      |                |                 | Significant effect       |                   |           |
|---------------------|--|--|----------------------|--------------------|--|----------------|-------------------------------|------------------|-----------------|----------------------|----------------|-----------------|--------------------------|-------------------|-----------|
| ID                  | Area represented   | Typical/highest monthly outdoor L <sub>pAeq</sub> [dB] |                      |                    | Construction activity resulting in highest forecast noise levels                                       | Type of effect | Number of impacts represented | Type of receptor | Receptor design | Existing environment | Unique feature | Combined impact | Impact duration [months] | Mitigation effect |           |
|                     |  | Day<br>0700-1900                                       | Evening<br>1900-2300 | Night<br>2300-0700 |  |                |                               |                  |                 |                      |                |                 |                          |                   |           |
|                     | South, Birmingham  |  |                      |                    | Duddeston Mill Road  |                |                               |                  |                 |                      |                |                 |                          |                   |           |
| 700505              | West Midlands Fire Service Headquarters offices, and commercial units, St James' Place, Birmingham | 68/77  | -                    | -                  | Day: Curzon Street No.2 viaduct deck   | B              | 2                             | G5               | T               | -                    | -              | Y               | D 5                      | -                 | CSV26-No5 |
| 700506              | Celestial Church of Christ, Fazeley Street, Birmingham   | 54/58  | <40/<40              | -                  | Day: demolition; Eve: classic rail track recovery Duddeston Mill Road                                  | B              | 1                             | G3               | T               | -                    | -              | N               | -                        | -                 |           |
| 700506              | Minerva Works, Fazeley Street, Birmingham  | 54/58  | -                    | -                  | Day: demolition  | B              | 7                             | G5               | T               | -                    | -              | N               | -                        | -                 |           |
| 700507              | Birmingham City Council Museum Collection Centre, Dollman Street, Birmingham                       | 63/70  | 52/53                | -                  | Day: utility diversions; Eve: classic rail track laying Duddeston Mill Road                            | B              | 1                             | G3               | S               | -                    | -              | Y               | D 30                     | -                 | CSV26-No4 |
| 700508              | Saltley Business Park, Gate Street, Saltley, Birmingham  | 70/81  | -                    | -                  | Day: utility diversions  | B              | 2                             | G5               | T               | H                    | -              | N               | D 7                      | -                 | CSV26-No3 |
| 700509              | Industrial units, Cato Road North, Birmingham  | 54/62  | -                    | -                  | Day: B4114 Saltley Viaduct bridge demolition   | B              | 3                             | G5               | T               | -                    | -              | N               | -                        | -                 |           |
| 700510              | Blueberry Hotel, Watson Road East, Birmingham  | 56/63  | 50/54                | 48/54              | Day: demolition; Eve: classic rail track laying Washwood Heath depot; Night: classic rail track laying | B              | 1                             | G4               | T               | H                    | -              | N               | -                        | -                 |           |

| Assessment location |   | Impact criteria  |                      |                    |  |                | Significance criteria         |                  |                 |                      |                |                 |                          | Significant effect |           |
|---------------------|---|--|----------------------|--------------------|--|----------------|-------------------------------|------------------|-----------------|----------------------|----------------|-----------------|--------------------------|--------------------|-----------|
| ID                  | Area represented                                      | Typical/highest monthly outdoor L <sub>pAeq</sub> [dB] |                      |                    | Construction activity resulting in highest forecast noise levels   | Type of effect | Number of impacts represented | Type of receptor | Receptor design | Existing environment | Unique feature | Combined impact | Impact duration [months] | Mitigation effect  |           |
|                     |   | Day<br>0700-1900                                       | Evening<br>1900-2300 | Night<br>2300-0700 |  |                |                               |                  |                 |                      |                |                 |                          |                    |           |
|                     |   |  |                      |                    | Washwood Heath depot   |                |                               |                  |                 |                      |                |                 |                          |                    |           |
| 700511              | Masjid Ali Mosque, Aston Church Road, Birmingham      | 69/77  | 45/49                | -                  | Day: utility diversions; Eve: classic rail track recovery Washwood Heath depot                                       | B              | 1                             | G <sub>3</sub>   | T               | H                    | -              | N               | D 5                      | -                  | CSV26-No2 |
| 700511              | Industrial unit, Arley Road, Birmingham               | 69/77  | -                    | -                  | Day: utility diversions  | B              | 2                             | G <sub>5</sub>   | T               | H                    | -              | N               | D 5                      | -                  | *         |
| 700518              | Bethel Free Baptist Church, Ward End Road, Birmingham | 61/65  | <40/47               | -                  | Day: Washwood Heath depot reprocessing of materials; Eve: Bromford tunnel west portal tunnel boring machine erection | B              | 1                             | G <sub>3</sub>   | T               | -                    | -              | N               | D 65                     | -                  | *         |
| 701039              | Job Centre, Washwood Heath Road, Birmingham           | 51/55  | -                    | -                  | Day: Washwood Heath depot buildings substructure   | B              | 1                             | G <sub>5</sub>   | T               | H                    | -              | N               | -                        | -                  |           |
| 701042              | Sidhu News, Washwood Heath Road, Birmingham           | 60/62  | -                    | -                  | Day: Washwood Heath depot logistics and storage compound   | B              | 1                             | G <sub>5</sub>   | T               | H                    | -              | N               | -                        | -                  |           |

## Airborne sound: indirect effects

4.3.7 Construction road traffic associated with the construction phases of the Proposed Scheme would generate airborne noise. Based upon traffic information for the Proposed Scheme, the change in traffic noise level at a reference distance of 10m from the edge of the nearside carriageway resulting from the presence of construction traffic for a given road has been predicted. Data has been provided for three representative periods during the works (quarter 4 2018, quarter 1 2019 and quarter 4 2019). The results for potentially significant road links are presented in Table 5.

4.3.8 Explanation of the information within Table 5 is provided in Volume 5: Appendix SV-001-000, with the following additional notes:

 Where the significant effect column is highlighted, then a significant effect is identified on nearby communities or individual receptors

### Change values

 Yellow denotes a minor impact – a change is of 3-5 dB or 1-3dB where a high existing sound level is identified

 Orange denotes a moderate impact – a change is of 5-10 dB or 3-5dB where a high existing sound level is identified

 Red denotes a major impact – a change is of >10 dB or >5dB where a high existing sound level is identified

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Table 5: Assessment of construction traffic noise levels

| Road name  | Link      | Future baseline sound level (dB)                     | Future baseline sound level + construction traffic (dB) quarter 4 2018 | Future baseline sound level + construction traffic (dB) quarter 1 2019 | Future baseline sound level + construction traffic (dB) quarter 4 2019 | Change (dB) quarter 4 2018 | Change (dB) quarter 1 2019 | Change (dB) quarter 4 2019 | Significant effect     |
|--|-----------|--|--|--|--|----------------------------|----------------------------|----------------------------|------------------------|
|  |           | Daytime L <sub>pAeq,16hr</sub> 0700-23:00 free-field | Daytime L <sub>pAeq,16hr</sub> 0700-2300 free-field                    | Daytime L <sub>pAeq,16hr</sub> 0700-2300 free-field                    | Daytime L <sub>pAeq,16hr</sub> 0700-2300 free-field                    |                            |                            |                            |                        |
| Aston Church Road between A47 Heartlands Parkway and Arley Road      | 1024-1029 | 70.2   | 72.4   | 72.6   | 72.6   | +2.2                       | +2.4                       | +2.4                       |                        |
| Washwood Heath Road from Aston Church Road to Arley Road             | 1028-1031 | 70.3   | 68.3   | 68.3   | 68.3   | -2.0                       | -2.0                       | -2.0                       | CSV26-C10<br>CSV26-N17 |
| B4114/High Street between Washwood Heath Road and Pennine Way        | 1019-1025 | 73.6   | 61.1   | 61.1   | 62.2   | -12.5                      | -12.5                      | -11.4                      | CSV26-N13              |
| B4114 Saltley Viaduct between A47 Heartlands Parkway and Pennine Way | 1014-1019 | 73.4   | N/A  | N/A  | N/A  | N/A                        | N/A                        | N/A                        | CSV26-N13              |
| Duddeston Mill Road between Adderley Road and Inkerman Street        | 1011-1018 | 69.6   | 73.1   | 73.1   | 73.2   | +3.5                       | +3.5                       | +3.6                       |                        |
| Cardigan Street north of Gopsal Street                               | 6144-6414 | 57.6   | 62.0   | 62.0   | 62.0   | +4.4                       | +4.4                       | +4.4                       | CSV26-C06<br>CSV26-No8 |
| Cardigan Street south of Gopsal Street                               | 6179-6414 | 55.2   | 61.7   | 61.7   | 61.7   | +6.5                       | +6.5                       | +6.5                       | CSV26-C06<br>CSV26-No8 |

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| Road name   | Link      | Future baseline sound level (dB)              | Future baseline sound level + construction traffic (dB) quarter 4 2018 | Future baseline sound level + construction traffic (dB) quarter 1 2019 | Future baseline sound level + construction traffic (dB) quarter 4 2019 | Change (dB) quarter 4 2018 | Change (dB) quarter 1 2019 | Change (dB) quarter 4 2019 | Significant effect |
|---|-----------|---|--|--|--|----------------------------|----------------------------|----------------------------|--------------------|
|   |           | Daytime $L_{pAeq,16hr}$ 0700-23:00 free-field | Daytime $L_{pAeq,16hr}$ 0700-2300 free-field                           | Daytime $L_{pAeq,16hr}$ 0700-2300 free-field                           | Daytime $L_{pAeq,16hr}$ 0700-2300 free-field                           |                            |                            |                            |                    |
| Montague Street between A4540 Lawley Middleway and Derby Street | 7504-8925 | 55.1  | 60.0   | 60.0   | 60.0   | +4.9                       | +4.9                       | +4.9                       |                    |
| B4114/Chapel Street north of Albert Street                      | 6108-6429 | 70.7  | 68.6   | 68.6   | 68.6   | -2.1                       | -2.1                       | -2.1                       | CSV26-C10          |
| B4114/Chapel Street south of Jennens Road                       | 6315-6429 | 69.9  | 67.3   | 67.3   | 67.3   | -2.6                       | -2.6                       | -2.6                       | CSV26-C10          |
| B4114/Park Street between Albert Street and Masshouse Lane      | 6107-6108 | 71.3  | 68.4   | 68.4   | 68.4   | -2.9                       | -2.9                       | -2.9                       | CSV26-C10          |
| Masshouse Lane south-east of car park entry                     | 6107-6430 | 64.2  | 67.5   | 67.5   | 67.5   | +3.3                       | +3.3                       | +3.3                       | CSV26-C09          |
| Masshouse Lane north-west of car park entry                     | 6420-6430 | 65.2  | 68.5   | 68.5   | 68.5   | +3.3                       | +3.3                       | +3.3                       | CSV26-C09          |
| Banbury Street north of Andover Street                          | 6110-7653 | 56.9  | 59.9   | 59.9   | 59.9   | +3.0                       | +3.0                       | +3.0                       |                    |
| Andover Street, north end                                       | 7653-7730 | 51.1  | 57.5   | 57.5   | 57.5   | +6.4                       | +6.4                       | +6.4                       |                    |

| Road name  | Link      | Future baseline sound level (dB)              | Future baseline sound level + construction traffic (dB) quarter 4 2018 | Future baseline sound level + construction traffic (dB) quarter 1 2019 | Future baseline sound level + construction traffic (dB) quarter 4 2019 | Change (dB) quarter 4 2018 | Change (dB) quarter 1 2019 | Change (dB) quarter 4 2019 | Significant effect     |
|--|-----------|---|--|--|--|----------------------------|----------------------------|----------------------------|------------------------|
|  |           | Daytime $L_{pAeq,16hr}$ 0700-23:00 free-field | Daytime $L_{pAeq,16hr}$ 0700-2300 free-field                           | Daytime $L_{pAeq,16hr}$ 0700-2300 free-field                           | Daytime $L_{pAeq,16hr}$ 0700-2300 free-field                           |                            |                            |                            |                        |
| Fazeley Street between New Canal Street and Benacre Drive            | 7301-7650 | 65.0  | 61.1   | 61.1   | 61.1   | -3.9                       | -3.9                       | -3.9                       |                        |
| Fazeley Street between Benacre Drive and Pickford Street             | 7122-7650 | 65.5  | 62.0   | 62.0   | 62.0   | -3.5                       | -3.5                       | -3.5                       |                        |
| Fazeley Street between Pickford Street and Barn Street               | 7122-7148 | 67.8  | 64.0   | 64.0   | 64.0   | -3.8                       | -3.8                       | -3.8                       |                        |
| Bordesley Street between New Canal Street and New Bartholomew Street | 7179-7197 | 59.6  | 52.5   | 52.5   | 52.5   | -7.1                       | -7.1                       | -7.1                       | CSV26-N15              |
| Floodgate Street between Fazeley Street and Little Ann Street        | 7149-8911 | 57.7  | 61.1   | 61.1   | 61.1   | +3.4                       | +3.4                       | +3.4                       |                        |
| Moor Street car park Road entry 1                                    | 7124-7545 | 63.3  | 56.4   | 56.4   | 56.4   | -6.9                       | -6.9                       | -6.9                       |                        |
| Moor Street car park Road entry 2                                    | 7507-7545 | 58.0  | 61.1   | 61.1   | 61.1   | +3.1                       | +3.1                       | +3.1                       |                        |
| Coventry Street between Alison Street and Meriden Street             | 7196-7198 | 53.6  | 60.8   | 60.8   | 60.8   | +7.2                       | +7.2                       | +7.2                       | CSV26-Co8<br>CSV26-N14 |

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| Road name   | Link      | Future baseline sound level (dB)              | Future baseline sound level + construction traffic (dB) quarter 4 2018 | Future baseline sound level + construction traffic (dB) quarter 1 2019 | Future baseline sound level + construction traffic (dB) quarter 4 2019 | Change (dB) quarter 4 2018 | Change (dB) quarter 1 2019 | Change (dB) quarter 4 2019 | Significant effect     |
|---|-----------|---|--|--|--|----------------------------|----------------------------|----------------------------|------------------------|
|   |           | Daytime $L_{pAeq,16hr}$ 0700-23:00 free-field | Daytime $L_{pAeq,16hr}$ 0700-2300 free-field                           | Daytime $L_{pAeq,16hr}$ 0700-2300 free-field                           | Daytime $L_{pAeq,16hr}$ 0700-2300 free-field                           |                            |                            |                            |                        |
| Alison Street between Coventry Street and B4100/Digbeth           | 7198-7199 | 54.5  | 60.9   | 60.9   | 60.9   | +6.4                       | +6.4                       | +6.4                       | CSV26-Co8<br>CSV26-N14 |
| Moore's Row between Milk Street and Floodgate Street              | 7409-7410 | 57.8  | 62.6   | 62.6   | 62.6   | +4.8                       | +4.8                       | +4.8                       |                        |
| Erskine Street south-east of Dollman Street                       | 1006-2003 | N/A   | 42.3   | 43.2   | 43.2   |                            |                            |                            |                        |
| Melvina Road off A47/Saltley Road                                 | 1007-1008 | 72.0  | 74.2   | 74.3   | 74.3   | +2.2                       | +2.3                       | +2.3                       | CSV26-Co9<br>CSV26-N16 |
| Access off Duddeston Mill Road (east of bridge)                   | 1011-2002 | N/A   | 46.0   | 47.3   | 47.3   |                            |                            |                            |                        |
| A47 Heartlands Parkway between Saltley Road and Aston Church Road | 1014-1024 | 75.4  | 76.4   | 76.4   | 76.4   | +1.0                       | +1.0                       | +1.0                       |                        |
| Adderley Road from Crawford Street to Ash Road                    | 1018-1020 | 69.7  | 71.3   | 71.3   | 71.4   | +1.6                       | +1.6                       | +1.7                       | CSV26-N16              |
| Washwood Heath Road between Arley Road and Alum Rock Road         | 1025-1028 | 72.2  | 69.7   | 69.7   | 69.7   | -2.5                       | -2.5                       | -2.5                       | CSV26-C10<br>CSV26-N17 |

| Road name  | Link                                  | Future baseline sound level (dB)              | Future baseline sound level + construction traffic (dB) quarter 4 2018 | Future baseline sound level + construction traffic (dB) quarter 1 2019 | Future baseline sound level + construction traffic (dB) quarter 4 2019 | Change (dB) quarter 4 2018 | Change (dB) quarter 1 2019 | Change (dB) quarter 4 2019 | Significant effect |
|--|---------------------------------------|---|--|--|--|----------------------------|----------------------------|----------------------------|--------------------|
|  |                                       | Daytime $L_{pAeq,16hr}$ 0700-23:00 free-field | Daytime $L_{pAeq,16hr}$ 0700-2300 free-field                           | Daytime $L_{pAeq,16hr}$ 0700-2300 free-field                           | Daytime $L_{pAeq,16hr}$ 0700-2300 free-field                           |                            |                            |                            |                    |
| Aston Church Road from Warren Road to Washwood Heath Road                | 1030-1031                             | 68.8  | 71.7   | 71.7   | 71.7   | +2.9                       | +2.9                       | +2.9                       | CSV26-Co9          |
| B4100 Moor Street Queensway, Carrs Lane to Moor Street Station           | 6706-6707 and 6424-6707               | 64.2  | 68.1   | 68.1   | 68.1   | +3.9                       | +3.9                       | +3.9                       |                    |
| B4100 Moor Street Queensway, Moor Street Station to St Martins Queensway | 6706-10000 and 6704-10001             | 69.5  | 70.6   | 70.6   | 70.6   | +1.1                       | +1.1                       | +1.1                       |                    |
| Moor Street south of B4100 Moor Street Queensway                         | 7113-7124 and 7113-7414               | 69.5  | 71.4   | 71.4   | 71.4   | +1.9                       | +1.9                       | +1.9                       |                    |
| Curzon Street, between New Canal Street to Millennium Point              | 1003-6109                             | 66.6  | 69.1   | 69.2   | 69.1   | +2.5                       | +2.6                       | +2.5                       | CSV26-No8          |
| B4100 Moor Street Queensway north of Albert Street 1                     | 1016-7133 and 6310-7133 and 7133-7417 | 69.1  | 70.7   | 70.7   | 70.7   | +1.6                       | +1.6                       | +1.6                       |                    |
| B4100 Moor Street Queensway north of Albert Street 2                     | 1016-7133 and 6310-7133 and 6310-7417 | 69.7  | 71.0   | 71.0   | 71.0   | +1.3                       | +1.3                       | +1.3                       |                    |

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| Road name  | Link                    | Future baseline sound level (dB)              | Future baseline sound level + construction traffic (dB) quarter 4 2018 | Future baseline sound level + construction traffic (dB) quarter 1 2019 | Future baseline sound level + construction traffic (dB) quarter 4 2019 | Change (dB) quarter 4 2018 | Change (dB) quarter 1 2019 | Change (dB) quarter 4 2019 | Significant effect |
|--|-------------------------|---|--|--|--|----------------------------|----------------------------|----------------------------|--------------------|
|  |                         | Daytime $L_{pAeq,16hr}$ 0700-23:00 free-field | Daytime $L_{pAeq,16hr}$ 0700-2300 free-field                           | Daytime $L_{pAeq,16hr}$ 0700-2300 free-field                           | Daytime $L_{pAeq,16hr}$ 0700-2300 free-field                           |                            |                            |                            |                    |
| B4100 Moor Street Queensway between Carrs Lane and Albert Street | 6707-7133 and 6424-7420 | 69.0  | 71.0   | 71.0   | 71.0   | +2.0                       | +2.0                       | +2.0                       | CSV26-N010         |
| Moor Street north of Park Street                                 | 7124-7414 and 7113-7124 | 68.7  | 70.3   | 70.3   | 70.3   | +1.6                       | +1.6                       | +1.6                       |                    |
| Fazeley Street between Barn Street and Floodgate Street          | 7148-7149               | 66.0  | 63.4   | 63.4   | 63.4   | -2.6                       | -2.6                       | -2.6                       |                    |
| Fazeley Street between Floodgate Street and Heath Mill Lane      | 7149-7171               | 67.8  | 65.9   | 65.9   | 65.9   | -1.9                       | -1.9                       | -1.9                       |                    |

## 4.4 Assessment of significant effects

### Residential receptors: direct effects – individual dwellings

4.4.1 Taking account of the avoidance and mitigation measures set out in the previous paragraphs, approximately 175 existing residential buildings, and proposed<sup>3</sup> residential buildings are forecast to experience noise levels higher than the noise insulation trigger levels as defined in the draft CoCP. The existing residential properties consist of approximately 70 buildings in the B4114 Washwood Heath Road area, approximately 50 buildings in the Northumberland Street area, around 50 buildings in the A4540 Lawley Middleway area and three properties in the vicinity of the proposed Curzon Street station. For daytime construction the trigger level is 75dB<sup>4</sup> measured outdoors, or the existing ambient if this is already above this level. For night-time construction the trigger level is 55dB<sup>5</sup> measured outdoors, or the existing ambient if this is already above this level.

4.4.2 At properties in the Washwood Heath Road area of Washwood Heath (CSV26-Co2) the draft CoCP trigger level is predicted to be exceeded during the daytime at a maximum of 48 properties off Coronation Road and Common Road for one and five months respectively in 2017. At Common Lane (assessment location 700513) utility diversions and demolition works in close proximity to the properties are the source of the exceedance. At Coronation Road (assessment location 67381) the installation of boundary fencing immediately adjacent to the closest properties is the source of the exceedance. At a maximum of a further 23 properties on Warren Road (assessment location 69289) the draft CoCP trigger level is predicted to be exceeded during the night –time for one month in 2021 due to sheet piling works at the Bromford Tunnel portal.

4.4.3 At the closest properties in Northumberland Street, Vauxhall (CSV26-Co4) the draft CoCP trigger level is predicted to be exceeded at night for five months in 2019, due to the deck works at the adjacent Curzon Street No. 2 viaduct.

4.4.4 In the Lawley Middleway area, Vauxhall (CSV26-Co5) the draft CoCP trigger level is predicted to be exceeded during the night at a maximum of 18 properties off Lawley Middleway, and a maximum of 32 properties off Vauxhall Road for five months in 2019, due to deck works at the nearby Curzon Street No. 3 viaduct. At the maximum of 18 properties off Lawley Middleway the daytime draft CoCP trigger level is also predicted to be exceeded for two months in 2018, due to road works on the A4540 Lawley Middleway.

4.4.5 At two existing properties off Penn Street in the vicinity of Curzon Street station (CSV26-Co6) the draft CoCP trigger level is predicted to be exceeded during the night for five months in 2019 due to deck works at the nearby Curzon Street No. 3 viaduct. These works are also likely to affect the closest residential properties in the proposed Eastside Locks mixed use development. Only limited details on the layout of the development are currently available, if the proposed residential buildings are set back

<sup>3</sup> Eastside Locks committed development. Refer to Volume 5: CT-004-000 for further details.

<sup>4</sup> L<sub>pAeq,0800-1800</sub> measured at the façade, outdoors, or the existing ambient if this is already above this level.

<sup>5</sup> L<sub>pAeq,2200-0700</sub> measured at the façade, outdoors, or the existing ambient if this is already above this level.

from the southern boundary of the development site, and are shielded by other non-residential buildings, then an exceedance of the draft CoCP trigger levels may not occur. At the existing individual property The Woodman Public House on Curzon Street (CSV26-D01) the draft CoCP trigger level is predicted to be exceeded during the day for two months in 2018 due to ground engineering works at the adjacent Curzon Street station.

- 4.4.6 The mitigation measures, including noise insulation, will reduce noise inside all dwellings, including those identified above, such that it does not reach a level where it would significantly affect<sup>1</sup> residents.

### **Residential receptors: direct effects –communities**

- 4.4.7 The avoidance and mitigation measures in this area will avoid airborne construction noise adverse effects<sup>1</sup> on the majority of receptors and communities. Residual temporary noise or vibration effects are identified later in this section.
- 4.4.8 With regard to noise outside dwellings, the assessment of temporary effects takes account of construction noise relative to existing sound levels.
- 4.4.9 In locations with lower existing sound levels<sup>6</sup>, construction noise adverse effects<sup>1</sup> are likely to be caused by changes to noise levels outside dwellings. These may be considered by the local community as an effect on the acoustic character of the area and hence be perceived as a change in the quality of life. These adverse effects are considered to be significant when assessed on a community basis taking account of the local context<sup>6</sup> as identified in Table 6.

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<sup>6</sup> Further information is provided in Volume 5: Appendix SV-001-000

4.4.11 Vibro-compaction is likely to result in appreciable ground-borne vibration at a small number of individual dwellings, situated closest to this activity, resulting in minor adverse effects at these properties<sup>7</sup>. These receptors will also be exposed to appreciable noise from the construction of the Proposed Scheme. The significance of the identified vibration effects has been assessed in combination with the airborne noise also identified at these receptors.

4.4.12 Table 6 presents a summary of the likely residual significant direct effects on residential communities. The typical and worst case construction noise levels are reported to the nearest 5dB. The number of dwellings in each community has also been rounded to the nearest 5-10 properties.

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<sup>7</sup> Resulting in a low probability of adverse comment. There is no risk of damage, even cosmetic, to buildings

Table 6: Direct adverse effects on residential communities and shared open areas that are considered to be significant on a community basis

| Significant effect number | Type of significant effect | Time of day   | Location  | Cause (construction activities)  | Assumed approximate duration of impact and details     |
|---------------------------|----------------------------|---------------|---|--|--|
| CSV26-Co1                 | Construction noise         | Day           | Washwood Heath. Approximately 40 dwellings on Drews Lane  | Site mobilisation, watercourse diversion, depot buildings, reprocessing of materials, with typical and highest monthly noise levels of around 60-65dB and 70dB <sup>8</sup> respectively.  | Ranging from 6 to 24 months                            |
| CSV26-Co2                 | Construction noise         | Day and Night | Washwood Heath. Approximately 250 dwellings on Warren Road, Common Lane, Pounds Green and Coronation Road during the day, around 40 of which also experience night-time effects | Day: fencing, utility diversions, demolition, depot buildings, landscaping/resoilng, reprocessing of materials and logistics and storage operations, with typical and highest monthly noise levels of around 60-70dB and 70-80dB <sup>8</sup> respectively.<br><br>Night: tunnel portal sheet piling, with typical and highest noise levels of around 45dB and 55dB <sup>9</sup> | Day: ranging from 1 to 65 months<br><br>Night: 1 month |
| CSV26-Co3                 | Construction noise         | Day           | Saltley. Approximately 90 dwellings on Arley Road   | Utility diversions, with typical and highest monthly noise levels of around 60dB and 75dB <sup>8</sup> respectively.   | 1 month  |
| CSV26-Co4                 | Construction noise         | Day and Night | Vauxhall. Approximately 50 dwellings on Northumberland Street   | Day: Demolition and viaduct works, with typical and highest monthly noise levels of around 60 and 70dB <sup>8</sup><br><br>Night: Viaduct deck works with typical and highest noise levels of around 55dB and 65dB <sup>9</sup>  | Day: 9 months<br><br>Night: 5 months                   |
| CSV26-Co5                 | Construction noise         | Day and night | Vauxhall. Approximately 50 dwellings off Lawley Middleway during the night, around 20 of which also experience daytime effects  | Day: Roadworks on Lawley Middleway, with typical and highest monthly noise levels of around 65 and 75dB <sup>8</sup><br><br>Night: Viaduct deck works, with typical and highest noise levels of around 50dB and 60dB <sup>9</sup>  | Day: 2 months<br><br>Night: 5 months                   |
| CSV26-Co6                 | Construction noise         | Day and night | Eastside. During the day approximately 2 existing dwellings off Penn Street, the Jennens Court student flats on   | Day: Utility diversions, demolition, road works on Lawley Middleway and construction of the new Curzon Street station with typical and highest monthly noise levels of around 60-65 and 70dB <sup>8</sup> respectively   | Day: Ranging from 7-20 months<br><br>Night: 5 months   |

<sup>8</sup> Daytime: equivalent continuous sound level at the facade, L<sub>pAeq, 0700-1900</sub><sup>9</sup> Night-time: equivalent continuous sound level at the facade, L<sub>pAeq, 2300-0700</sub>

|           |                    |     |   |   |            |
|-----------|--------------------|-----|---|---|------------|
|           |                    |     | Etna Street and the proposed Eastside Locks mixed use development off Curzon Street, of which the 2 dwellings off Penn Street and the Eastside Locks development also experience effects at night | Night: Viaduct deck works, with typical and highest noise levels of around 55dB and 60dB <sup>9</sup>             |            |
| CSV26-Co7 | Construction noise | Day | Digbeth. Approximately 15 dwellings on Bordesley Street and New Bartholomew Street  | Utility diversions, with typical and highest monthly noise levels of around 65 and 75dB <sup>8</sup> respectively | 1-2 months |

4.4.13 At properties on City View and Ashley Gardens, off Adderley Road in Saltley, represented by assessment locations 56716 and 56870, the night-time impact criterion is exceeded by 1dB for one or two months in 2018. Based on the low predicted construction noise levels and the limited magnitude and duration of the impact, a significant effect at these properties is not considered likely.

### Residential receptors: indirect effects

4.4.14 Construction traffic is likely to cause adverse noise effects on residential receptors along the following local roads:

- Cardigan Street in Digbeth between Curzon Street and B4114 Jennens Road (CSV26-Co6). Any proposed residential receptors on the boundary of the Eastside Locks committed development with Cardigan Street are forecast to experience an increase in traffic noise levels during the peak months following the permanent closure of a section of Park Street. Increases in traffic noise levels of around 7dB are predicted on the southern half of Cardigan Street and around 4 dB on the northern half (further information is provided in Volume 2: Section 12 Traffic and transport); and
- Allison Street and Coventry Street between Allison Street and Meriden Street in Digbeth (CSV26-Co8). Residential buildings on these streets are forecast to experience a moderate increase in traffic noise levels of around 7dB, during the peak months due to localised re-routing of traffic to connect to/from New Canal Street (further information is provided in Volume 2: Section 12 Traffic and transport).

4.4.15 These adverse effects<sup>1</sup> would be a change in the acoustic character of the area<sup>1</sup> such that there is a perceived change in the quality of life. The effects are considered to be significant when assessed on a community basis taking account of the local context<sup>6</sup>.

4.4.16 Construction traffic is also likely to cause adverse or beneficial noise effects on residential receptors along the following local very busy roads:

- Aston Church Road between Warren Road and Washwood Heath Road in Washwood Heath; Melvina Road between A47 Saltley Road and B4132 Great Francis Street in Nечells Green; and Masshouse Lane between Albert Street and Moor Street Queensway in Eastside (CSV26-C9). Residential dwellings and buildings on these streets are forecast to experience an increase in traffic noise levels of around 2 to 3dB, during the peak months due to localised re-routing of traffic (further information is provided in Volume 2: Section 12 Traffic and transport); and
- B4114 Washwood Heath Road, between Aston Church Road and Alum Rock Road in Washwood Heath; B4114 Chapel Street between Jennens Road and Albert Street; and B4114 Park Street between Albert Street and Masshouse Lane, in Eastside (CSV26-C10). Residential dwellings and buildings on these streets are forecast to experience a minor decrease in traffic noise levels of between 2 and 3dB due to the localised re-routing of traffic (further information is provided in Volume 2: Section 12 Traffic and transport).

4.4.17 The small increases and decreases in sound level on these busy roads are considered to be significant at the identified receptors as they are already exposed to high ambient noise levels<sup>10</sup>.

### **Non-residential receptors: direct effects**

4.4.18 Significant construction noise or vibration effects have been identified on a worst case basis on the following non-residential receptors the typical and worst case noise levels are reported to the nearest 5dB:

- Leigh Junior, Infant and Nursery School and Hasanat College, off Warren Road, Washwood Heath (CSV26-No1). Significant noise effects have been identified during the daytime with construction levels rising at times to around 65dB and 75dB<sup>8</sup> respectively. Though typical levels are around 60 dB<sup>8</sup>. The rear of both the school and the college face onto the Washwood Heath depot site therefore a range of works at the depot contribute to the predicted construction noise levels, which exceed the impact criterion for a total of 54 and 49 months respectively. The highest noise levels are during the short term works to install solid hoarding on the southern boundary of the depot, and the demolition of existing buildings in close proximity to the boundary. The impact screening criterion is low at just under 60dB<sup>8</sup>, equal to the existing ambient measured at the rear of properties on Warren Road backing onto the depot site. Therefore, the duration of the actual impact, in terms of affecting activities at the school and college, is likely to be limited to a few months when works are at the closest approach. The height of the hoarding between the school and college and the depot site has been maximised to provide screening to the school and

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<sup>10</sup> 65 dB L<sub>pAeq,0700-2300</sub> free-field during the day

college;

- Masjid Ali Mosque on Aston Church Road, Washwood Heath (CSV26-No2). Significant noise effects have been identified during the daytime with noise levels rising at times to around 75dB<sup>8</sup> when utility diversion works on Aston Church Road are at the closest approach. Typical construction noise levels are around 70dB<sup>8</sup>. The duration of the impact is 5 months. The existing ambient noise levels are also around 75 dB<sup>8</sup> at the façade facing onto Aston Church Road, therefore the adverse noise effect may be more limited than identified;
- The closest commercial units in Saltley Business Park and Network Park industrial estate to the works, including the offices of the Staffordshire and West Midlands Probation Service (CSV26-No3). Significant noise effects have been identified during the daytime with noise levels rising at times to around 80dB<sup>8</sup>. The significant effect is associated with works such as utility diversions, fencing and demolition of adjacent units when on-going in very close proximity. It has been assumed that the western façade of the buildings facing the works are in office use. Typical construction noise levels are between 65 and 70dB<sup>8</sup>. The duration of the impact is one to two months at the commercial units, at the Staffordshire and West Midlands Probation Service offices the duration is seven months when works are on-going at the entrance to the Saltley Business Park. The levels of construction vibration are also above the criterion for offices for short periods of time when vibro-compaction of earthworks is closest;
- Birmingham City Council (BCC) Museum Collections Centre, Dollman Street, Vauxhall (CSV26-No4). Significant noise effects have been identified during the daytime with noise levels rising at times to around 70dB<sup>8</sup> due to a range of works mainly associated with the adjacent Curzon Street No. 1 viaduct. The duration of the impact is 30 months, though this is based on a fairly low screening criterion of just over 60dB<sup>8</sup>. The main building closest to the works is of an industrial nature constructed of metal cladding with no windows facing towards the works, and this should reduce internal construction noise levels. The structural fill earthworks associated with the Curzon Street No. 1 viaduct extend to within 15m of the southern corner of the BCC Museum Collections Centre. Although not operating as a museum open to the public full time, some items in the collection are on display and are vulnerable to vibration. Vibration adverse effects are forecast for short periods of time when vibro-compaction of earthworks is at its closest location to the building. Close liaison with BCC will be carried out to ensure any vulnerable items are suitably protected for the short duration of vibro-compaction works in close proximity to the building;
- various commercial and industrial premises to the north of the route between Erskine Street and the A4540 Lawley Middleway including the West Midlands Fire Service Headquarters office building (CSV26-No5). Significant noise effects have been identified during the daytime with noise levels rising at times to around 75 to 80dB<sup>8</sup>. Typical construction noise levels are around 65dB<sup>8</sup>. At the commercial units, which are assumed to be in office use,

demolition of adjacent units is the source of the effect for around two months. At the West Midlands Fire Service Headquarters a range of works at the adjacent Curzon Street No. 2 and No. 3 viaducts are the source of the effect for around five months. The Proposed Scheme earthworks extend to approximately 10m of the rear aspect of the West Midlands Fire Service Headquarters. Vibration adverse effects are forecast for short periods of time when vibro-compaction of earthworks is at its closest location to the office building;

- Safeside educational facility, operated by the West Midlands Fire Service, Vauxhall (CSV26-No6). Significant noise effects have been identified during the daytime with noise levels rising to just under 80dB<sup>8</sup> during the short term installation of fencing along the rear façade of the building. Nearby demolition works also result in a significant daytime effect with noise levels rising to just under 70dB<sup>8</sup>. Typical construction noise levels are around 60dB<sup>8</sup>, the duration of the impact is four months. The Safeside facility is an industrial style building with no apparent openings on the façade facing the construction works, and this should reduce internal construction noise levels;
- Professional Music Technology premises, A4540 Lawley Middleway (CSV26-No7). Significant noise effects have been identified during the daytime with noise levels rising to just over 75dB<sup>8</sup> due to demolition of adjacent buildings and utility diversions and road works on the adjacent A4540 Lawley Middleway. The studios are located on the ring road where existing daytime ambient noise levels are just under 70dB<sup>8</sup> which suggests the studios are designed to mitigate high external noise levels;
- Millennium Point, the Parkside Building (containing the Institute of Art and Design and the School of Media) and the adjacent proposed Birmingham City University buildings and hotel at the Eastside Locks committed development (CSV26-No8). Significant noise effects have been identified during the daytime with noise levels rising to around 70dB<sup>8</sup> due to a range of works associated with the new Curzon Street station and Curzon Street No. 3 viaduct, plus demolition and utility works. Typical daytime construction noise levels are around 65dB<sup>8</sup>, the duration of the impact is 71 months, though this is based on a criterion equal to the existing fairly low ambient levels of around 60dB<sup>8</sup>. At night a significant noise effect on the proposed hotel has been identified with noise levels rising up to around 60dB<sup>9</sup>, due to works to install the deck of the Curzon Street No. 3 viaduct over the A4540 Lawley Middleway and Digbeth Branch Canal. Typical night-time construction noise levels are around 55dB<sup>9</sup>, the duration of the impact is 5 months, though this is based on a criterion equal to the existing fairly low ambient levels of just over 50dB<sup>9</sup>. Millennium Point contains a wide range of uses including a cinema, educational facilities, the Think Tank science museum and various commercial and retail uses. The adjacent Parkside Building is an educational facility operated by Birmingham City University. The effect on activities inside the buildings will depend on the exact usage and construction of the buildings along the south facade facing the works. Limited details are available regarding the proposed new university

buildings and Eastside Locks development, the position of the hotel within the site is not finalised, if it set back from Curzon Street within the development a significant night time effect is unlikely;

- Hotel La Tour, B4100 Moor Street Queensway (CSV26-Nog). Significant noise effects have been identified during the daytime with noise levels rising to just over 75dB<sup>8</sup> due to short term utility diversions immediately adjacent to the south-east façade of the hotel. Existing daytime ambient noise levels in this area are just less than 70 dB<sup>8</sup>. Typical construction noise levels are around 65dB<sup>8</sup>, the duration of the impact is three months;
- Carrs Lane Church and St Michaels Church, on B4100 Moor Street Queensway (CSV26-No10). Significant noise effects have been identified during the daytime with noise levels rising to just under 75dB<sup>8</sup> due to a range of works at the new station including demolition, utility diversions and ground engineering works. The affected facades face onto the busy B4100 Moor Street Queensway where existing daytime ambient noise levels are just less than 70dB<sup>8</sup>. Typical construction noise levels are around 65dB<sup>8</sup>, the duration of the impact is five months;
- the Taboo Cinema on Park Street (CSV-No11). Significant noise effects have been identified during the daytime with noise levels rising to over 75dB<sup>8</sup> due to a range of works at the proposed Curzon Street station including demolition, utility diversions, ground engineering works and works below ground. Typical construction noise levels are around 65dB<sup>8</sup>, the duration of the impact is 12 months. Existing daytime ambient noise levels are just under 70dB<sup>8</sup> in this area and the cinema does not have any windows on the façade facing the works, therefore the effect on the premises may be limited; and
- The Polish Centre, Bordesley Street (CSV-N12). Significant noise effects have been identified during the daytime with noise levels rising to around 75dB<sup>8</sup> due to a range of works at the proposed Curzon Street station including demolition, utility diversions, ground engineering works and works below ground. Typical construction noise levels are around 65dB<sup>8</sup>, the duration of the impact is 12 months. Though, as the main usage of the club is likely to be during the evenings and weekends the impact of construction noise on activities inside the building may be limited.

4.4.19 At the Bethel Free Baptist Church, Ward End Road, Washwood Heath, represented by assessment location 700518, daytime construction noise levels are predicted to exceed the impact criterion. The exceedance is due primarily to the operation of the logistics and storage area and the reprocessing of materials area at the Washwood Heath depot, which are on-going for the majority of the depot works. These activities are ongoing during the daytime only, which would not affect the main usage of the church at evenings and weekends. In addition, based on the brick structure of the church with limited glazing, the predicted construction noise levels are considered unlikely to cause undue disturbance to activities inside the church. A significant effect has therefore not been identified at the church.

4.4.20 At the Saltley Baptist Church, George Arthur Road, represented by assessment location 54867, construction noise levels are predicted to be 2 to 4 dB above the significance criteria for three months commencing in 2017 due to utility diversion and demolition works. However, based on the limited magnitude and duration of the exceedance, the usage of the church predominantly at evenings and weekends and the low construction noise levels, a significant effect is considered to be unlikely. Similarly at the nearby Adderley Children's Centre, St Saviours Road, represented by assessment location 54833, construction noise levels 2dB above the impact criterion are predicted for one month in 2017 due to demolition works. Based on the small magnitude and duration of the exceedance a significant effect is considered to be unlikely at the centre.

4.4.21 At St Vincents School, Vauxhall Grove, represented by assessment location 51868, the daytime impact criterion is exceeded by 1dB for one month in 2017. Based on the limited magnitude and duration of the exceedance a significant effect is considered to be unlikely at the school.

4.4.22 At assessment location 46410 the daytime impact criteria for a hotel and place of worship is exceeded by 1dB for one month in 2017. This assessment location is used to represent a range of buildings including the Crown Hotel on Corporation Street and the Central Methodist Church on Dalton Street. However, as both these sensitive receptors are located considerably further away from the works than the assessment location, and the criterion is only exceeded by 1dB at the assessment location, no significant effect has been identified at these receptors.

4.4.23 At the commercial premises on the junction of Aston Church Road and Arley Road, A4540 Lawley Middleway, and in the vicinity of Moor Street Station, represented by assessment locations 700511, 52180 and 41993 respectively, the impact criterion for offices is exceeded by 1 to 3dB for two to five months. Based on the industrial rather than office type uses of the premises, the limited magnitude and duration of the exceedance, and the existing high ambient noise levels in these areas, a significant adverse effect is considered to be unlikely at these premises.

### **Non-residential receptors: indirect effects**

4.4.24 Construction traffic is likely to cause significant indirect noise effects at non-residential receptors along the following local roads:

- B4114 Saltley Viaduct and High Street between A47 Heartlands Parkway and B4114 Washwood Heath Road, in Washwood Heath, affecting various commercial and office premises which face onto the road (CSV26-N13). A temporary beneficial effect is forecast, with the major decrease in traffic noise levels during the temporary closure of B4114 Saltley Viaduct leading to a reduction in road traffic noise of over 10 dB, (further information is provided in Volume 2: Section 12 Traffic and transport);
- Cardigan Street in Birmingham city centre, between Curzon Street and the B4114 Jennens Road, affecting the east façade of the Parkside Building (containing the Institute of Art and Design and the School of Media), the proposed new Birmingham City University buildings and the proposed mixed

use Eastside Locks committed development on the boundary with Cardigan Street (CSV26-No8). An adverse effect is associated with a moderate increase in traffic noise levels of around 7dB on the southern half of Cardigan Street and a minor increase of around 4dB on the northern half, during the peak months following the permanent closure of a section of Park Street (further information is provided in Volume 2: Section 12 Traffic and transport).

Cumulative effects due to both direct and indirect noise effects may occur at the southern end of Cardigan Street closest to the Curzon Street station works;

- Allison Street and the section of Coventry Street between Allison Street and Meriden Street in Birmingham city centre affecting various commercial premises (CSV26-N14). An adverse effect is associated with a moderate increase in traffic noise levels of around 7dB, during the peak months due to the localised re-routing of traffic to connect to/from New Canal Street (further information is provided in Volume 2: Section 12 Traffic and transport);
- Bordesley Street in Birmingham city centre between New Canal Street and New Bartholomew Street affecting various adjacent commercial premises (CSV26-N15). A beneficial effect is associated with a moderate reduction in traffic noise levels of around 7dB due to the local re-distribution of traffic (further information is provided in Volume 2: Section 12 Traffic and transport);
- Melvina Road between A47 Saltley Road and B4132 Great Francis Street, in Nechells; Adderley Road between Crawford Street and Ash Road, in Saltley (CSV26-N16); B4100 Moor Street Queensway between Carrs Lane and Albert Street (CSV26-N10); and Curzon Street east of New Canal Street, in Eastside (CSV26-No8). Various receptors on these streets, mainly consisting of commercial premises, but also including the Nechells Green Community Centre on Melvina Road, Adderley Children's Centre off Adderley Road, Carrs Lane Church Centre and St Michaels Church on B4100 Moor Street Queensway, and Millennium Point on Curzon Street are forecast to experience a minor increase in traffic noise levels of around 2dB due to localised re-routing of traffic (further information is provided in Volume 2: Section 12 Traffic and transport). Cumulative effects due to both direct and indirect noise effects may occur at receptors on Curzon Street and B4100 Moor Street Queensway closest to the Curzon Street station works; and
- Washwood Heath Road, between Aston Church Road and Adderley Road, in Washwood Heath (CS26-N17). Various receptors on this road, mainly consisting of commercial premises, but also including the Al-Huda school and the Madrasa Anjuman-I-Naqeeb-al-Islam community centre are forecast to experience a minor decrease in traffic noise levels of around 2dB, due to the localised re-routing of traffic (further information is provided in Volume 2: Section 12 Traffic and transport).

4.4.25 Erskine Street and the access off Duddeston Mill Road are used as access points into construction compounds therefore there is no corresponding baseline traffic data available. However, based on the low predicted construction traffic noise levels and

the industrial nature of the surrounding areas a significant effect has not been identified.

4.4.26 The predicted increase in traffic noise levels at the north end of Andover Street and on Banbury Street have not been identified as resulting in a significant effect at adjacent receptors. This is due to the overall baseline measured ambient noise levels in the vicinity being rather higher than both the predicted baseline and with construction traffic noise levels on these roads alone. In these locations the contribution from traffic on other nearby more major roads is likely to mask any change in local traffic noise levels.

4.4.27 Based on the magnitude of the change and the nature of the surrounding area a significant effect (adverse or beneficial) has not been identified along the following road links:

- the accesses into Moor Street car park;
- Aston Church Road between A47 and Arley Road;
- A47 Heartlands Parkway between Saltley Road and Aston Church Road;
- Duddeston Mill Road between Adderley Road and Inkerman Street;
- Montague Street between A4540 Lawley Middleway and Derby Street;
- Fazeley Street between New Canal Street and Heath Mill Lane;
- Floodgate Street between Fazeley Street and Little Ann Street;
- Moore's Row between Milk Street and Floodgate Street;
- B4100 Moor Street Queensway, St Martins Queensway to Carrs Lane, and north of Albert Street; and
- Moor Street.

### **Cumulative effects from the Proposed Scheme and other committed development.**

4.4.28 This assessment has considered the potential cumulative construction noise effects of the Proposed Scheme and other committed developments<sup>11</sup>. In this area, it is not anticipated that there will be any developments built at the same time as the Proposed Scheme and accordingly, construction noise or vibration from the Proposed Scheme is unlikely to result in any significant cumulative noise effects.

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<sup>11</sup> Volume 5: Appendix CT-004-000 sets out the list of committed developments.

## 5 References

Birmingham City Council, (2005), *Birmingham Unitary Development Plan*.